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AUTHOR Hammer, Petra
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ABSTRACT

This study guide was designed to help high school students learn the basic skills in classical guitar playing, technique, fingerboard knowledge, and musicianship. The introduction describes how to read the music notation that is presented in traditional music form and also in tablature diagrams showing finger positioning in the guitar neck. Guidelines are provided for the Segovia scale patterns and right hand fingering. The remainder of the document diagrams the various scales and corresponding fingering positions in ascending and descending order. (KM)

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Guitar Scales

in

Music Notation and Tablature Diagrams

by

Petra Hammer

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INTRODUCTION

The study of scales is essential for the acquisition of guitar technique. Segovia (1953) suggested that the practice of scales will correct faulty hand positions, gradually increase the strength of the fingers, and prepare the joints for later speed studies. He also claimed that "the practice of scales enables one to solve a greater number of technical problems in a shorter time than the study of any other exercise".

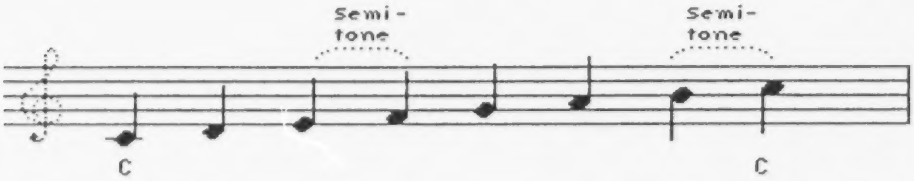
Through the study of scales the student learns all the notes on the fingerboard of the guitar, thus enabling him or her to play in various positions.

Technique, fingerboard knowledge, and musicianship are the essential ingredients for an accomplished guitarist.

GUIDE TO THE SCALES IN MUSIC NOTATION

The scales in note notation are either written in two or three octaves. The numbers above the notes on the music staff refer to the fingers of the left hand.

Below is the first line of the C-Scale in music notation:



The numbers (1 to 6) below the music staff refer to the six guitar strings.

The numbers (1 to 4) above the music staff refer to the four fingers of the left hand.

In the example above, the starting note (C) is to be played on the fifth string with the second finger. On the fifth string, the C note is on the third fret. Thus, you place your second finger on the fifth string in the third fret to play the C note.

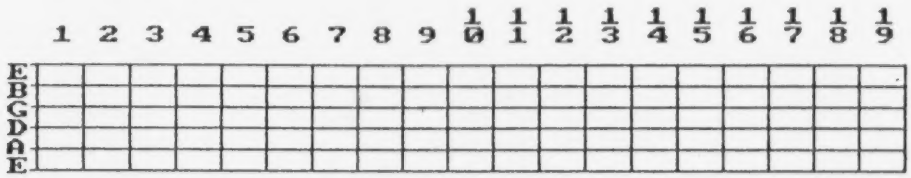
The next note, the D, is played on the 5th string with the 4th finger.

The first two notes were played on the fifth string. Notice that the next three notes are played on the fourth string. You use the first finger, the second finger, and the fourth finger to play these three notes.

The next four notes, beginning with the A-note, are played on the third string. The last note on the line is played on the second string. The scale continues to the next music staff. See page 1 for the complete scale.

GUIDE TO THE SCALES IN TABULATURE

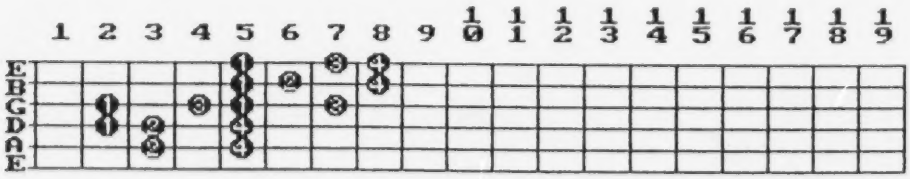
The scales are also laid out in tablature notation on the guitar neck. The numbers 1 to 19 on top of the E string refer to the 19 frets. The 6 guitar strings are labelled by their respective names: the first string is the E string, the second string the B string, the third string the G string, the fourth string the D string, the 5th string the A string and the sixth string the E string.



The example below is the C-Scale. The numbers in the black circle refer to the fingers of the left hand:

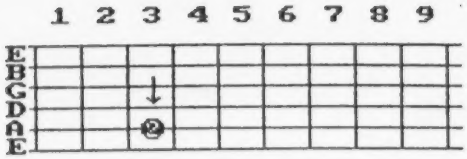
In order to play an ascending scale you need to start on the lowest string and with the smallest finger number. You continue to play the remainder of the notes on that string, then you move to the next string, starting with the note highest on the neck of the guitar and moving down the neck until all of the indicated notes are played. You then proceed through all of the remaining strings in the same manner. For some descending scales, you merely reverse the procedure and go back the way you came, for others a separate descending scale pattern is given.

Here is a detailed example of how the ascending C-scale is played.

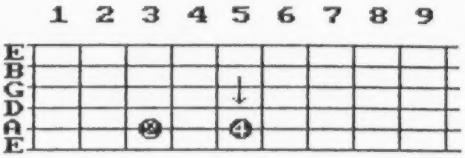


C MAJOR SCALE ASCENDING AND DESCENDING

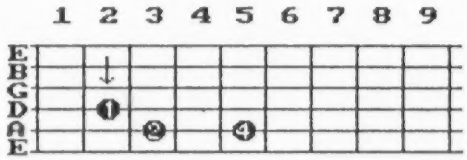
You start on the fifth string in the third fret with the second finger to play the C-note.



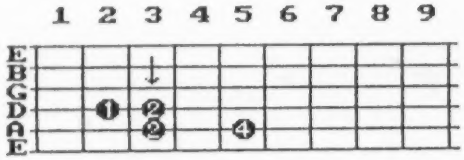
Then you place the fourth finger in the 5th fret on the 5th string. C and D are the only 2 notes on the 5th string.



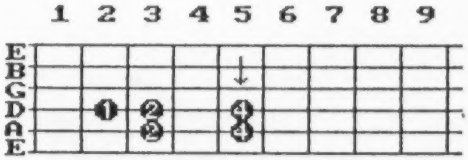
You move to the 4th string. Three notes are to be played on the 4th string. Starting with the smallest number, place finger number 1 in the 2nd fret.



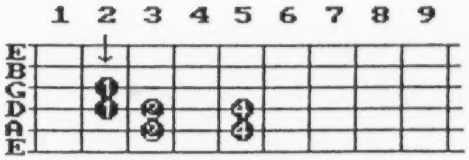
Place finger number 2 in the 3rd fret.



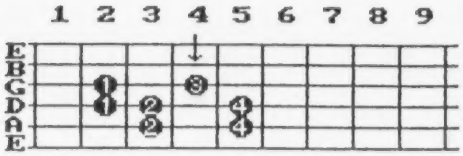
Place finger number 4 in the 5th fret.



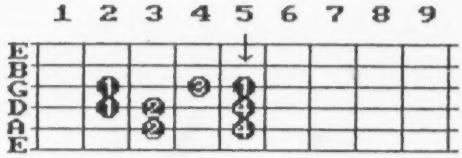
On the 3rd string 4 notes are to be played. The 1st finger is played in the 2nd fret.



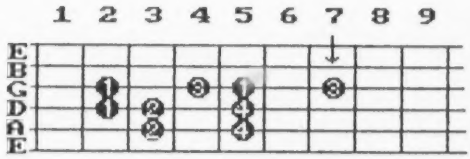
The 3rd finger is played in the 4th fret.



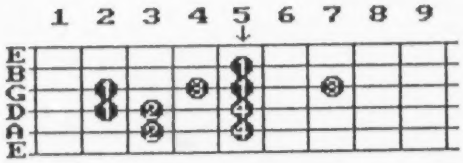
The hand position is changed. The 1st finger is placed in the 5th fret on the 3rd string.



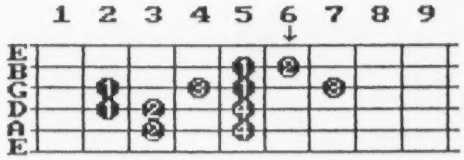
The 3rd finger is placed in the 7th fret.



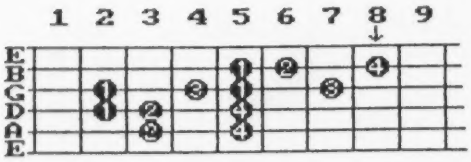
On the 2nd string the 1st finger is placed in the 5th fret.



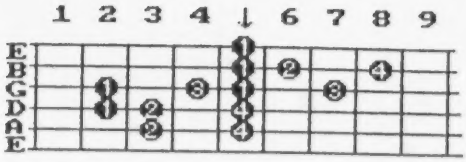
The 2nd finger is placed in the 6th fret.



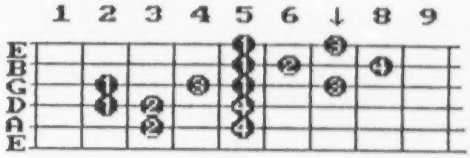
The 4th finger is positioned in the 8th fret.



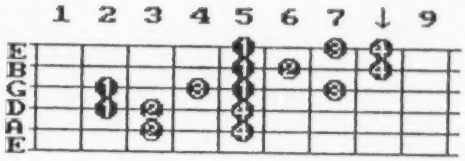
On the 1st string the 1st finger is placed in the 5th fret.



The 3rd finger is placed in the 7th fret.



The 4th finger is placed in the 8th fret.



You have ascended the scale of C. To descend the scale, just retrace these steps backwards. From the 4th finger in the 8th fret of the first string to the 3rd finger in the 7th fret, to the first finger in the 5th fret. Continue descending the scale with the 4th finger in the 8th fret on the second string, etc.

For the Segovian scales the finger pattern is very important. Thus, it was deemed more important to include the fingering for the scales than the note names. However, the name of the notes played can be determined by referring to the note chart of the guitar fingerboard (see Figure 1).

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
E		F	F#	G	G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
B		C	C#	D	D#	E	F	F#	G	G#	A	A#	B	C	C#	D				
G		G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	A					
D		D#	E	F	F#	G	G#	A	A#	B	C	C#	D							
A		A#	B	C	C#	D	D#	E	F	F#	G	G#	A							
E		F	F#	G	G#	A	A#	B	C	C#	D	D#	E							

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
E	F	G♭	G	A♭	A	B♭	B	C	D♭	D	E♭	E	F	G♭	G	A♭	A	B♭	B
B	C	D♭	D	E♭	E	F	G♭	G	A♭	A	B♭	B	C	D♭	D				
G	A♭	A	B♭	B	C	D♭	D	E♭	E	F	G♭	G	A♭	A					
D	E♭	E	F	G♭	G	A♭	A	B♭	B	C	D♭	D							
A	B♭	B	C	D♭	D	E♭	E	F	G♭	G	A♭	A							
E	F	G♭	G	A♭	A	B♭	B	C	D♭	D	E♭	E							

FIGURE 1 NOTES ON THE GUITAR FINGERBOARD

GUIDE TO THE SEGOVIA SCALE PATTERNS

There are 24 scales, 12 diatonic major and 12 diatonic minor scales but you only have to learn 8 scale patterns to play all 24 scale patterns.

An examination of the Segovia scale pattern reveals the following regularities. For the diatonic major scales 4 different scale patterns have to be learned, the C, G, E, and F scales. The C scale pattern applies to the D, the D flat and the E flat major scales. Thus, a total of 4 major scales are covered with the C major scale pattern. The G scale pattern applies also to the A, B, F sharp, A flat and B flat scales, covering a total of 6 scales. The E major scale has a unique scale pattern as does the F major scale.

For the melodic minor scales 4 distinct scale patterns have to be learned: the a melodic minor scale, the e melodic minor scale, the b melodic minor scale, and the c sharp melodic minor scale. With the a melodic minor scale pattern a total of 5 scales are played: a, f sharp, g sharp, f, and g melodic minor scales. The c sharp melodic minor scale pattern applies to 3 more scales: the d sharp, the c, and the d melodic minor scales. The b melodic minor scale pattern applies also to the b flat melodic minor scale. The e melodic minor scale has a unique scale pattern.

TABLE OF SCALES

MAJOR	SCALE PATTERN	MELODIC MINOR	SCALE PATTERN
C	C	a	a
G	G	e	e
D	C	b	b
A	G	f sharp	a
E	E	c sharp	c sharp
B	G	g sharp	a
F sharp	G	d sharp	c sharp
D flat	C	B flat	b
A flat	G	f	a
E flat	C	c	c sharp
B flat	G	g	a
F	F	d	c sharp

GUIDE TO RIGHT HAND FINGERING

The right hand fingers are lettered p, i, m, and a.

The fingers are named according to the first letter of the Spanish word.

p stands for	pulgar	meaning	thumb
i stands for	indicio	meaning	index finger
m stands for	medio	meaning	middle finger
a stands for	anular	meaning	ring finger

The scales should be practiced using the rest-stroke, referred to by its Spanish name as apoyando. There are 7 possible ways to play the scales without using the thumb. The patterns are as follows:

1. alternate i and m
2. alternate m and i
3. alternate a and m
4. alternate m and a
5. alternate i and a
6. alternate a and i
7. alternate i, m, a, m, i, m, a.

THE MAJOR SCALE

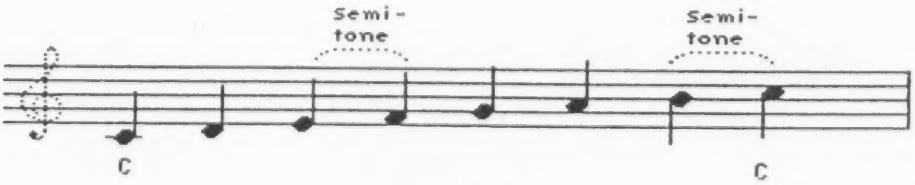
The word "scale" comes from the Latin word "scala", meaning ladder. The characteristic sound of any scale is determined by the number of notes, by the order in which they occur, and by the interval distance between the notes. Any scale can be distinguished from the others by its pattern. In Western music the most important scales are the diatonic major scale and the three relative minor scales, (natural, harmonic, and melodic).

A diatonic major scale is a progression of 8 notes to the octave with the following pattern of tones and semi-tones or whole and half steps:

1	2	3	4	5	6	7	8
tone	tone	semi-tone	tone	tone	tone	semi-tone	
			OR				
whole step	whole step	half step	whole step	whole step	whole step	half step	

All major scales have a semi-tone interval between the third and fourth note and the seventh and eighth notes. The scale is named by the note on which it starts and finishes.

For example, here is the C scale.



Summary of Tones in Major Scales

Scale	Number of # or b's	Notes altered	Tones of scale
C	0	0	C -D -E -F -G -A -B -C
G	1#	F#	G -A -B -C -D -E -F#-G
D	2#	F# -C#	D -E -F#-G -A -B -C#-D
A	3#	F#-C#-G#	A -B -C#-D -E -F#-G#-A
E	4#	F#-C#-G#-D#	E -F#-G#-A -B -C#-D#-E
B	5#	F#-C#-G#-D#-A#	B -C#-D#-E -F#-G#-A#-B
F#	6#	F#-C#-G#-D#-A#-E#	F#-G#-A#-B -C#-D#-E#-F#
Gb	6b	Bb-Eb-Ab-Db-Gb-Cb	Gb-Ab-Bb-Cb-Db-Eb-F -Gb
Db	5b	Bb-Eb-Ab-Db-Gb	Db-Eb-F -Gb-Ab-Bb-C -Db
Ab	4b	Bb-Eb-Ab-Db	Ab-Bb-C -Db-Eb-F -G -Ab
Eb	3b	Bb-Eb-Ab	Eb-F -G -Ab-Bb-C -D -Eb
Bb	2b	Bb-Eb	Bb-C -D -Eb-F -G -A -Bb
F	1b	Bb	F -G -A -Bb-C -D -E -F

# = sharp
b = flat

THE MINOR SCALE

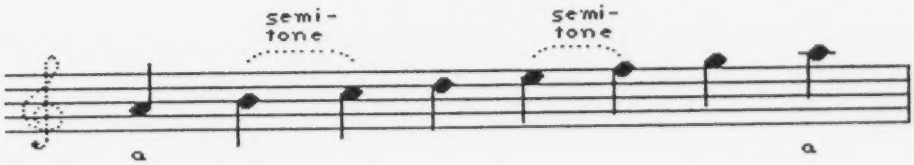
There are 3 different diatonic minor scales for every major scale: the natural or relative minor scale, the harmonic minor scale and the melodic minor scale. Each minor scale has its own individual pattern. In the natural minor scale the two half steps or semi-tones occur between the second and third notes and the fifth and sixth notes.

The natural minor scale:

1	2	3	4	5	6	7	8
tone	semi-tone	tone	tone	semi-tone	tone	tone	

OR

whole step	half step	whole step	whole step	half step	whole step	whole step

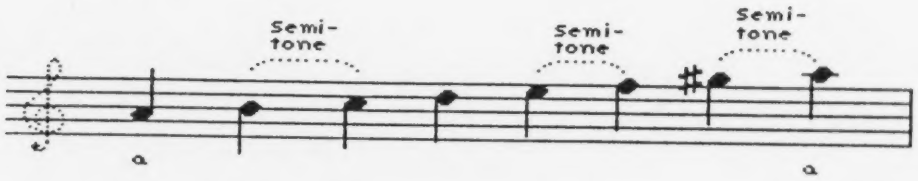


THE MINOR SCALE

The harmonic minor scale:

The harmonic minor scale raises the seventh tone half a step ascending and descending.

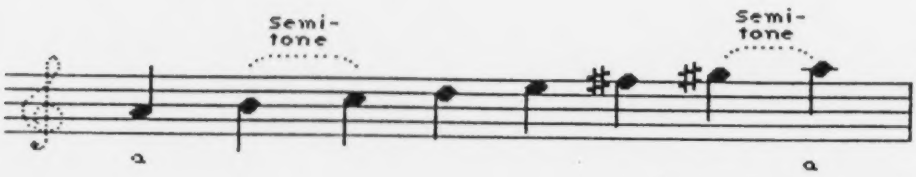
1	2	3	4	5	6	7	8
tone	semi-tone	tone	tone	semi-tone	1+1/2 tone	semi-tone	



The melodic minor scale:

The melodic minor scale raises the sixth and seventh tone half a step ascending but returns to the natural scale when descending.

1	2	3	4	5	6	7	8
tone	semi-tone	tone	tone	tone	tone	semi-tone	



Summary of Tones in the Harmonic Minor Scales

Scale	Number of # or b's	Notes altered	Tones of scale
A	0	0	A -B -C -D -E -F -G#-A
E	1#	F#	E -F#-G -A -B -C -D#-E
B	2#	F# -C#	B -C#-D -E -F#-G -A#-B
F#	3#	F#-C#-G#	F#-G#-A -B -C#-D -E#-F#
C#	4#	F#-C#-G#-D#	C#-D#-E -F#-G#-A -B#-C#
G#	5#	F#-C#-G#-D#-A#	G#-A#-B -C#-D#-E -Fx-G#
D#	6#	F#-C#-G#-D#-A#-E#	D#-E#-F#-G#-A#-B#-Cx-D#
Bb	5b	Bb-Eb-Ab-Db-Gb	Bb-C -Db-Eb-F -Gb-A -Bb
F	4b	Bb-Eb-Ab-Db	F -G -Ab-Bb-C -Db-E -F
C	3b	Bb-Eb-Ab	C -D -Eb-F -G -Ab-B -C
G	2b	Bb-Eb	G -A -Bb-C -D -Eb-F#-G
D	1b	Bb	D -E -F -G -A -Bb-C#-D

# = sharp
b = flat
x = double sharp

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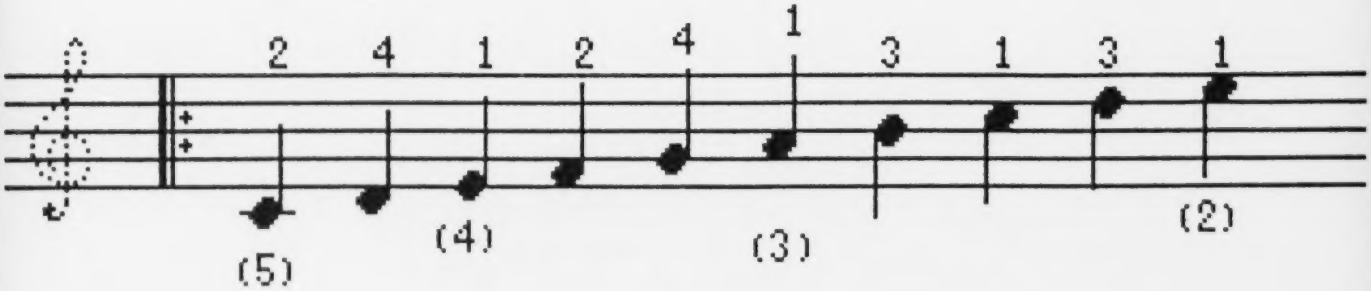
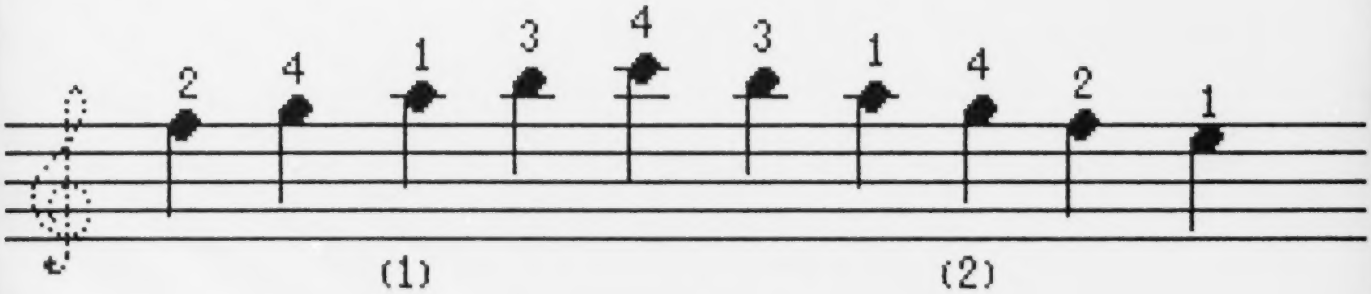
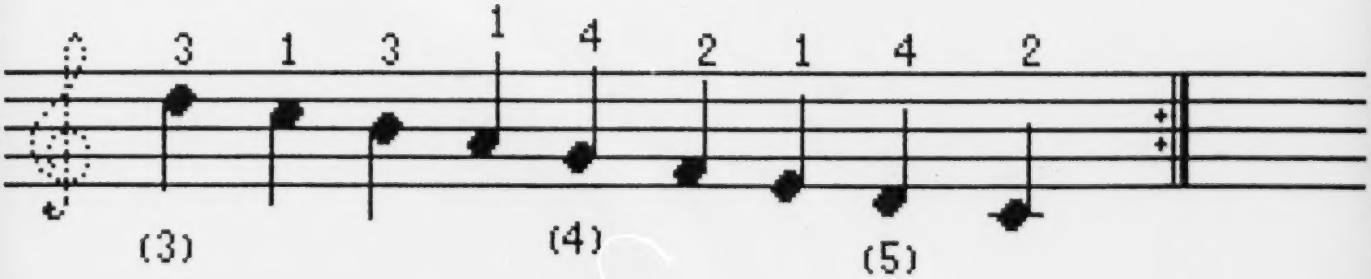

2 4 1 2 4 1 3 1 3 1
(5) (4) (3) (2)


2 4 1 3 4 3 1 4 2 1
(1) (2)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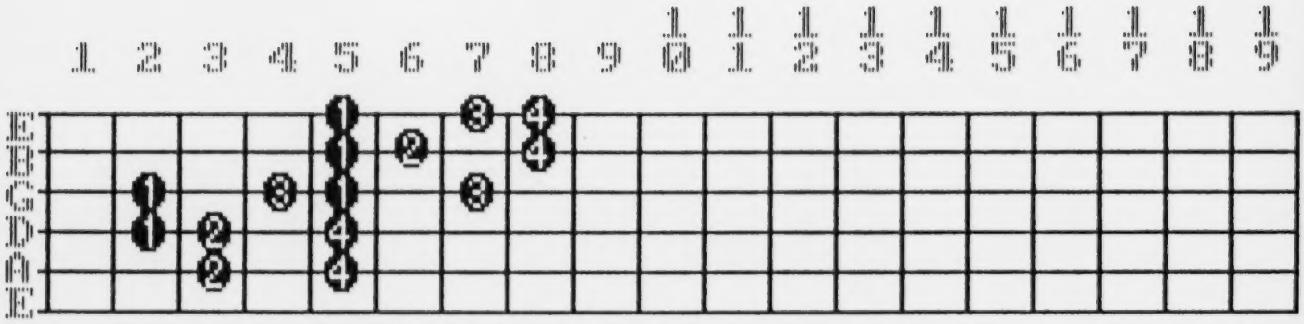
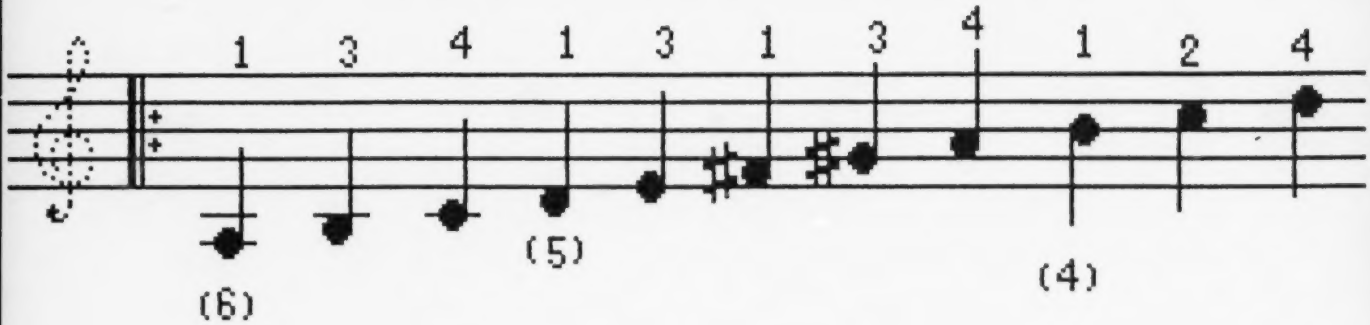


C MAJOR SCALE ASCENDING AND DESCENDING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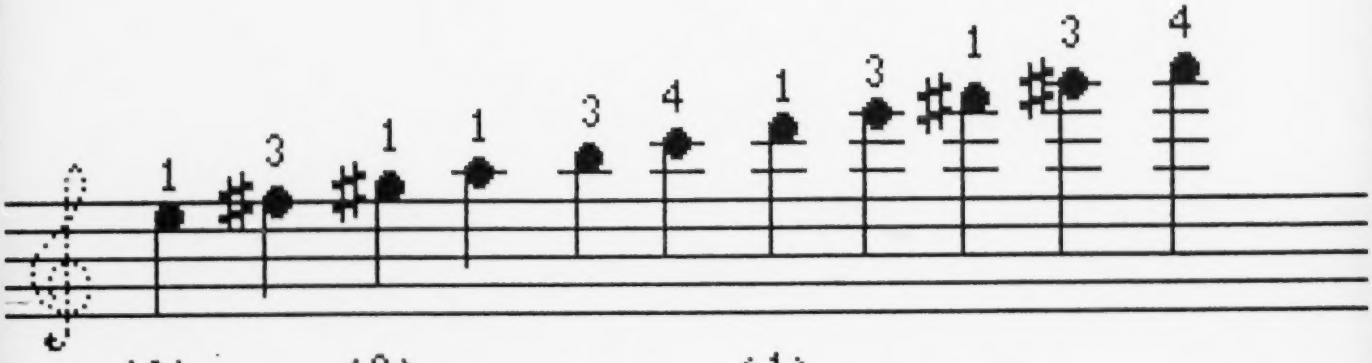
(6)
(5)
(4)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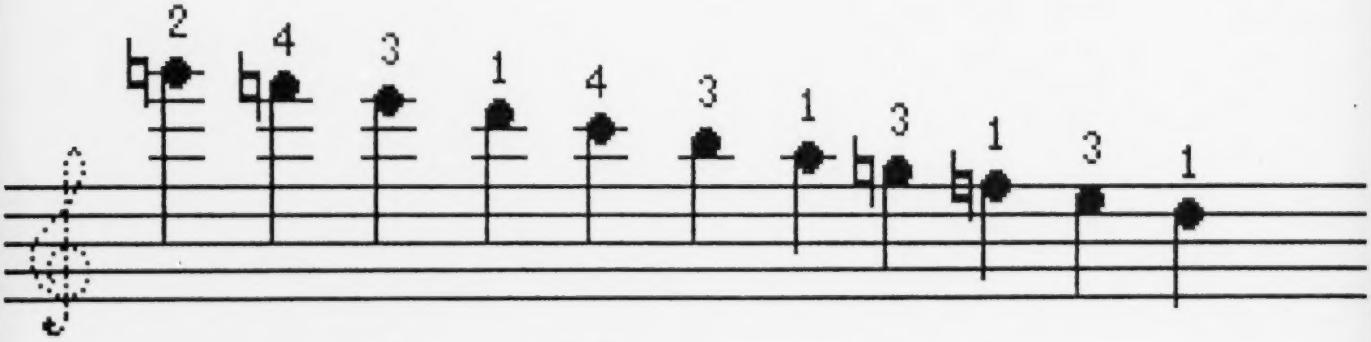
(2)
(1)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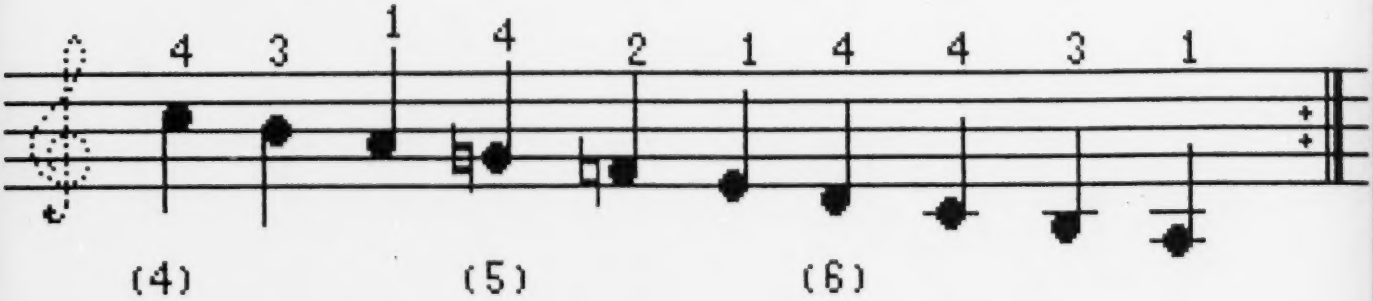
(3)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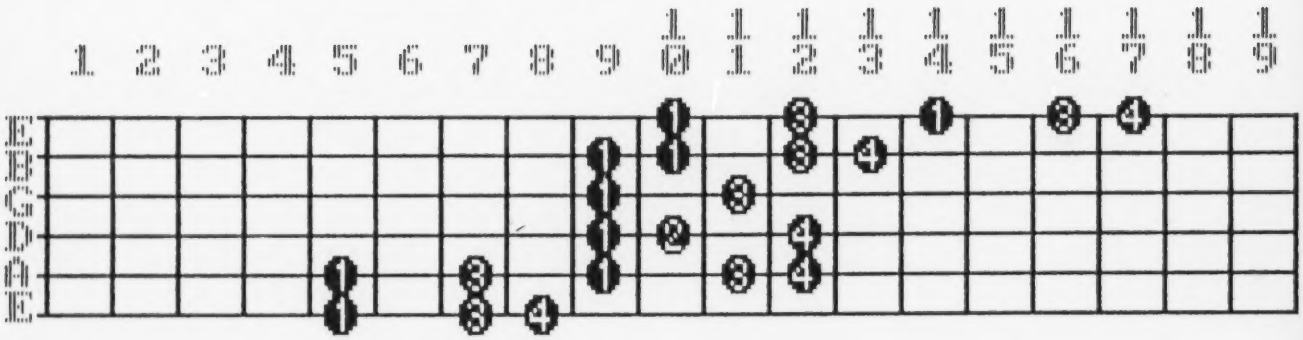
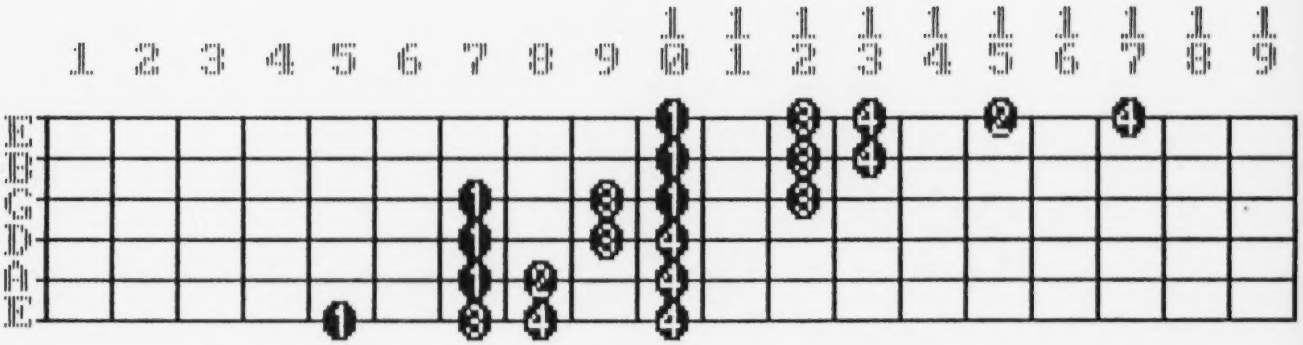
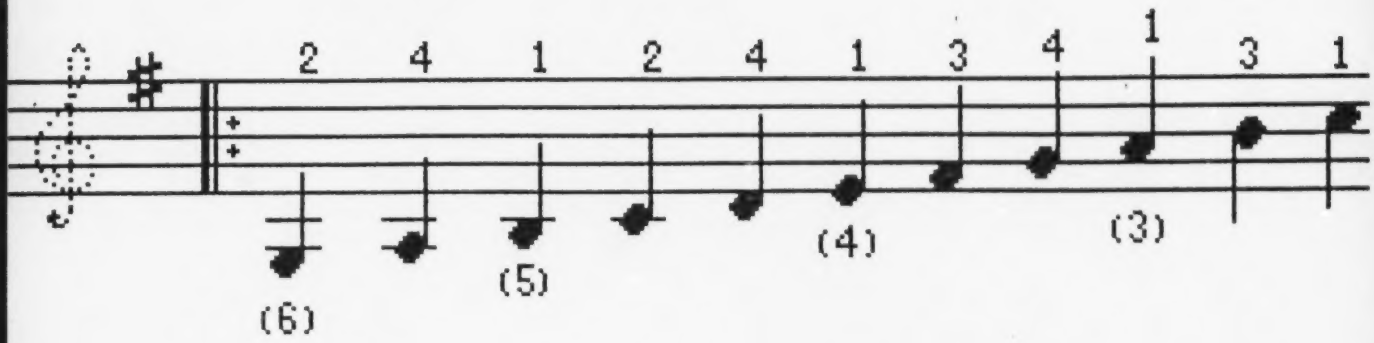
(5)
(6)



A MELODIC MINOR SCALE ASCENDING



A MELODIC MINOR SCALE DESCENDING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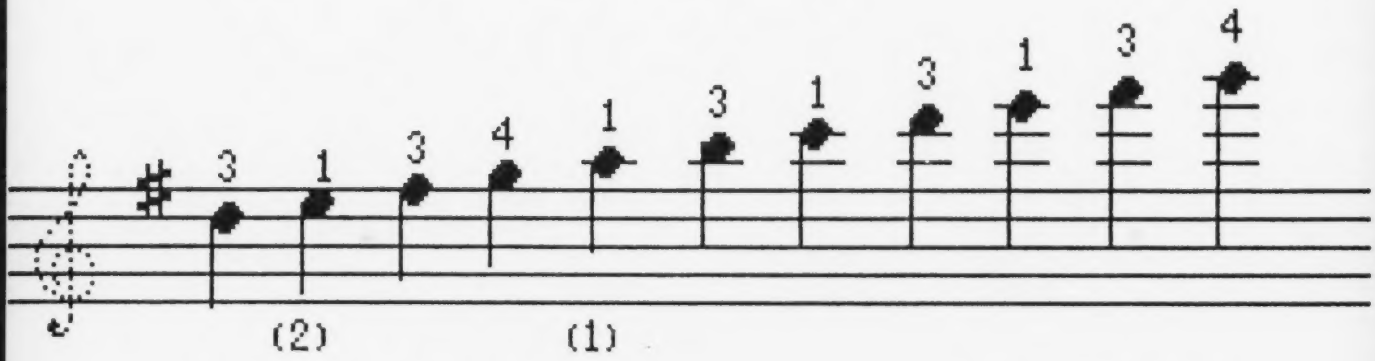
(6) (5) (4) (3)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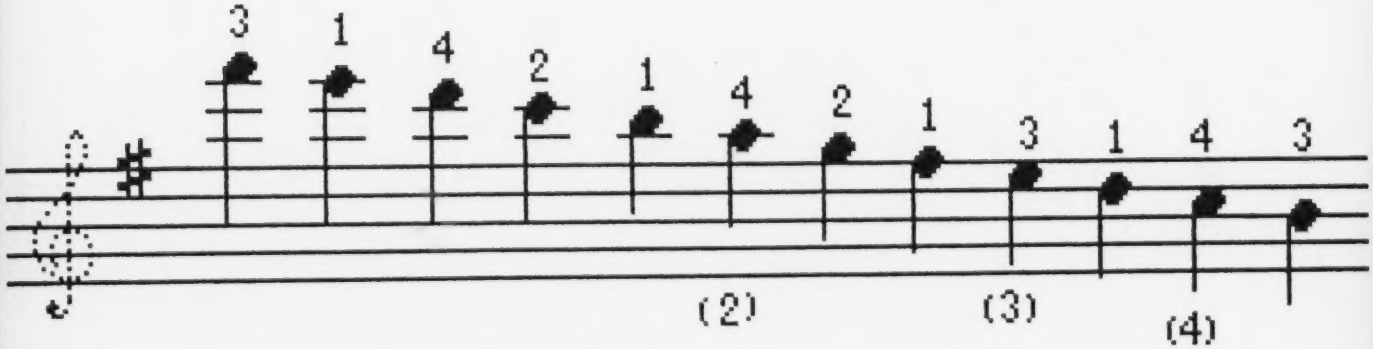
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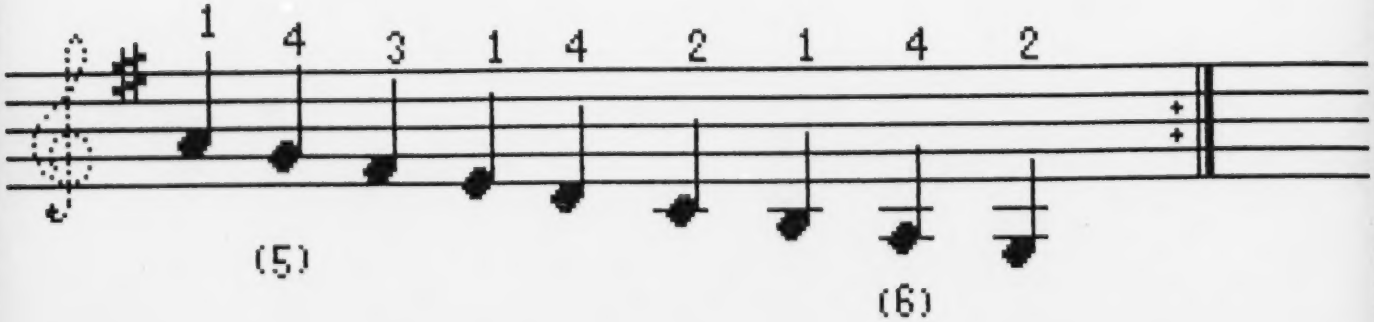
(2) (3) (4)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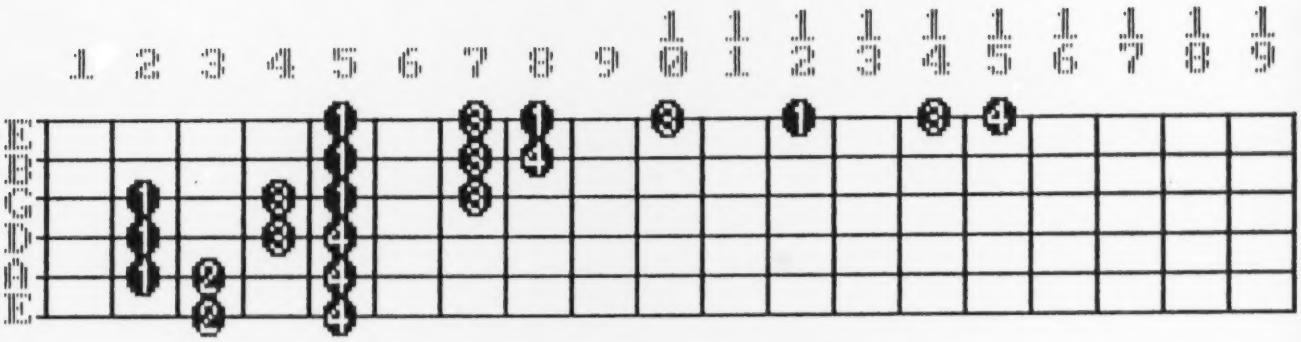
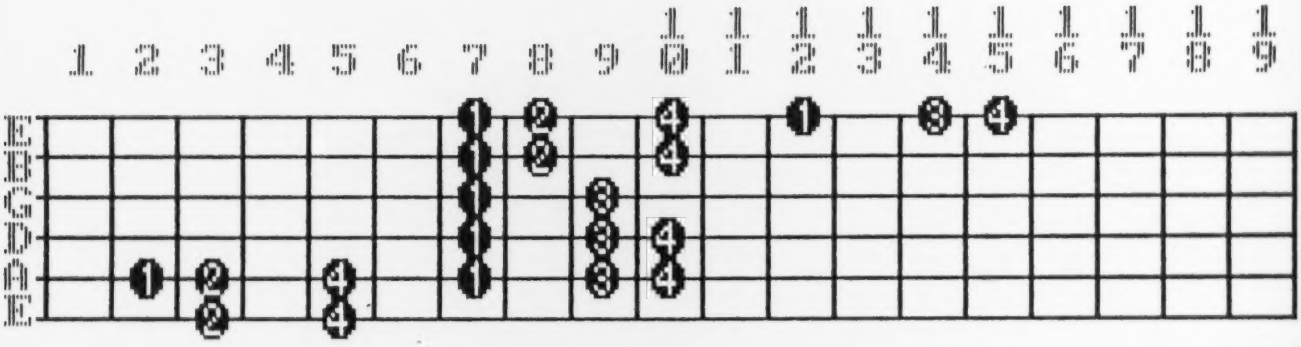
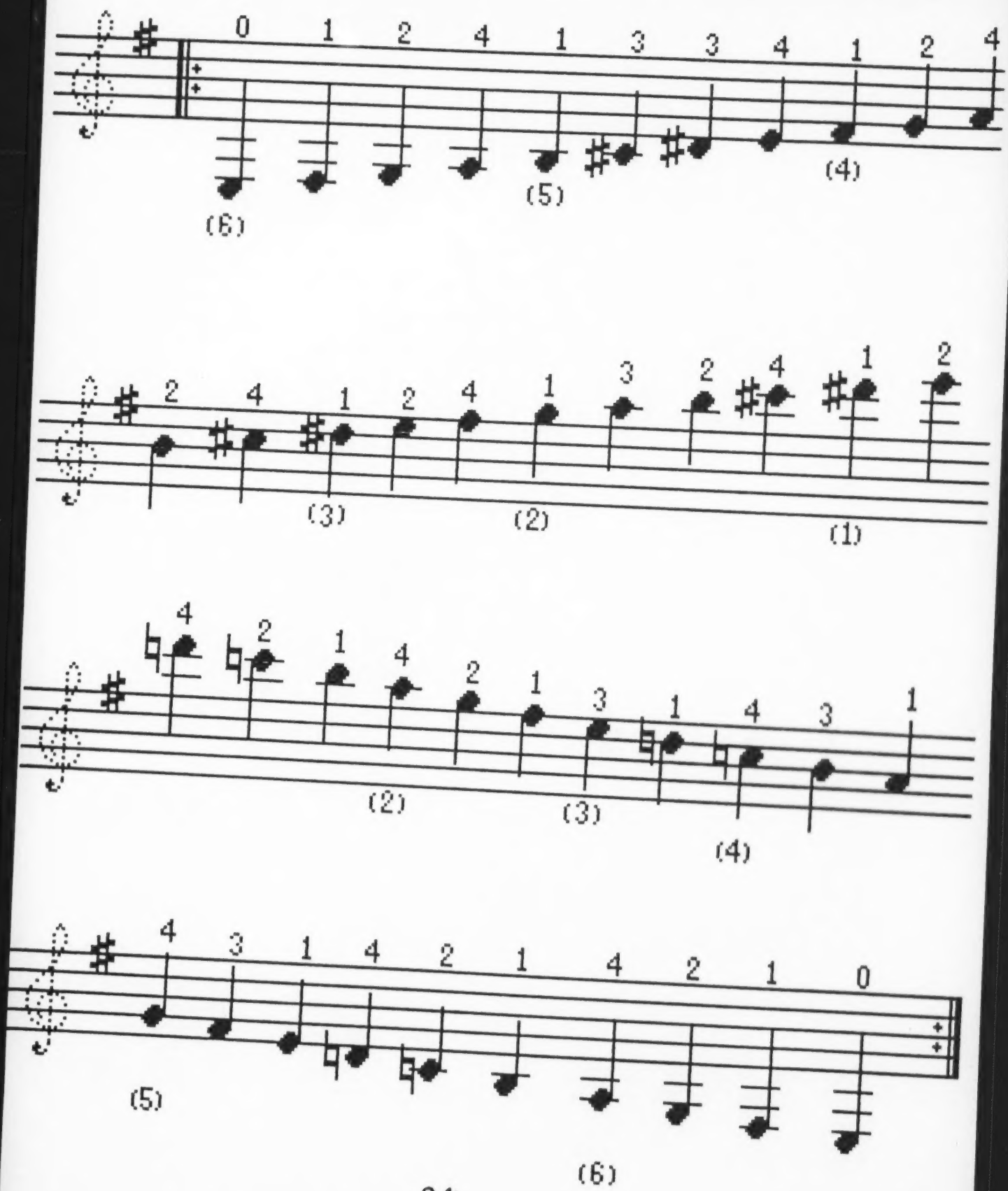


G MAJOR SCALE ASCENDING



G MAJOR SCALE DESCENDING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(6) (5) (4)
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(2) (3) (4)
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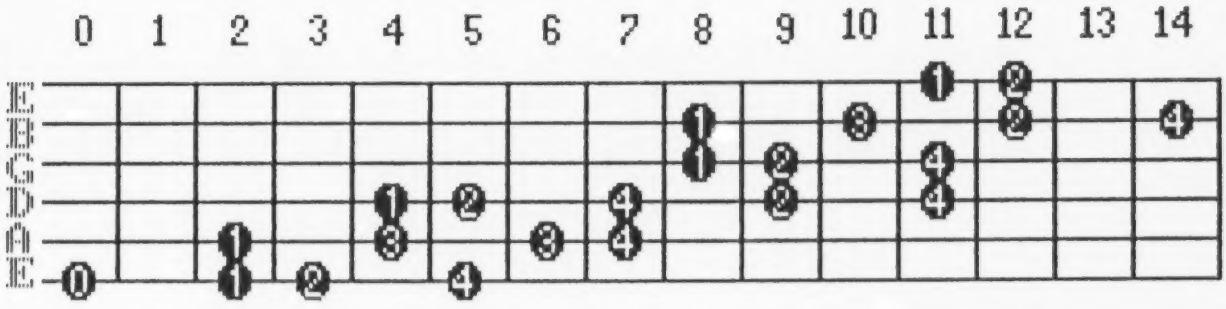
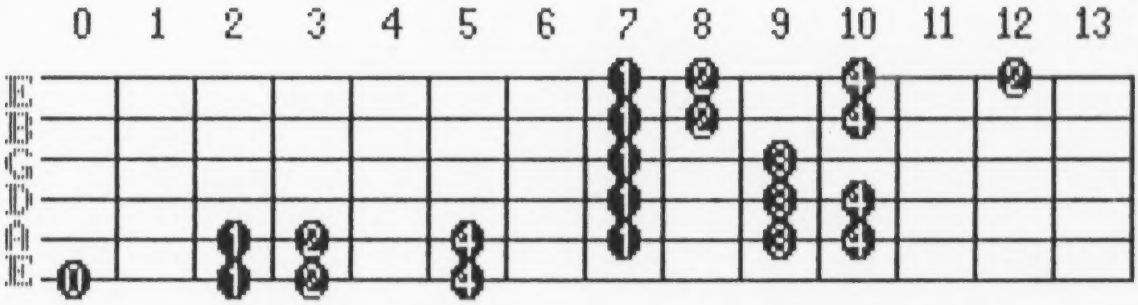
(5) (6)



E MELODIC MINOR SCALE ASCENDING



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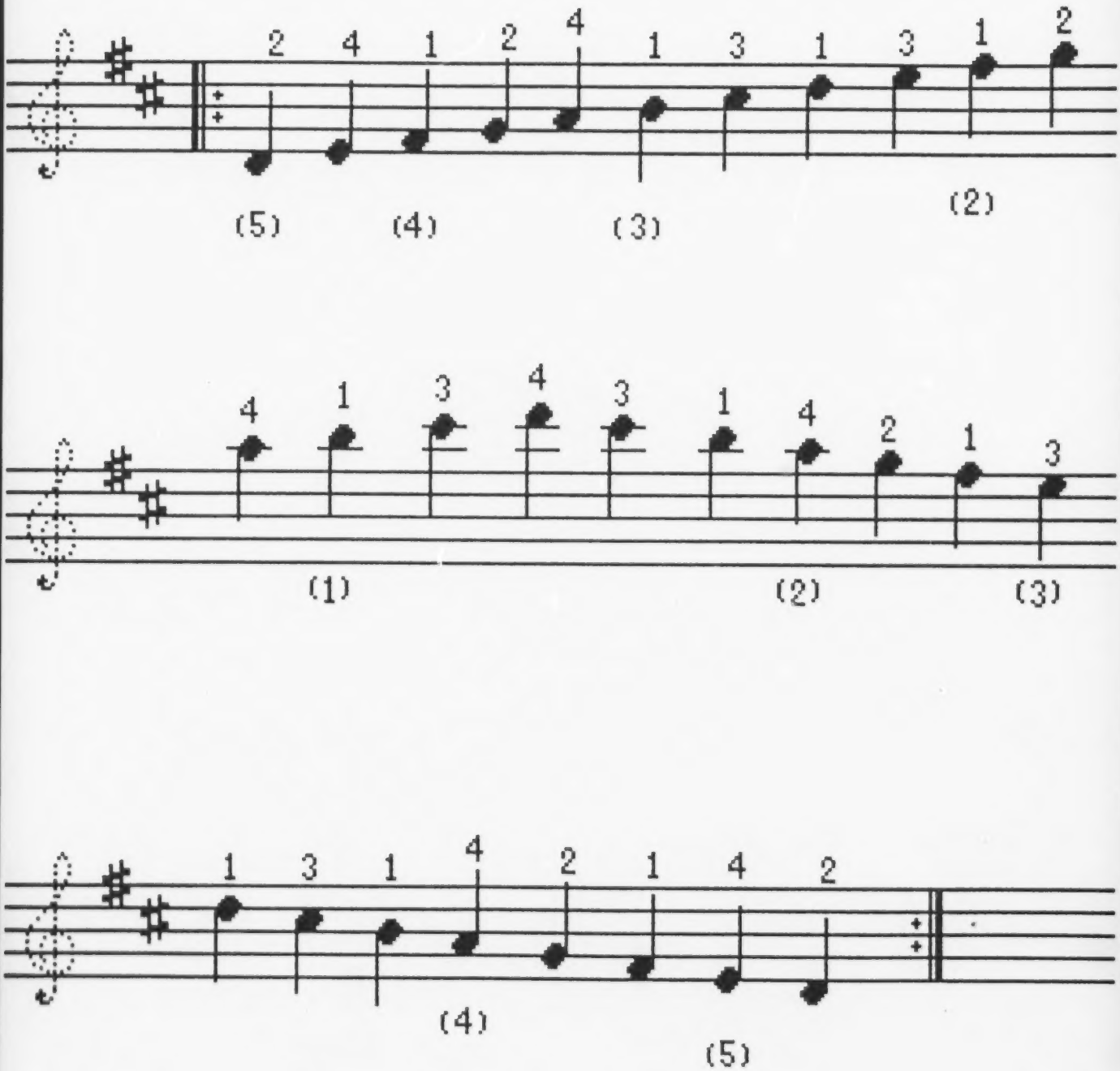
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(1) (2) (3)
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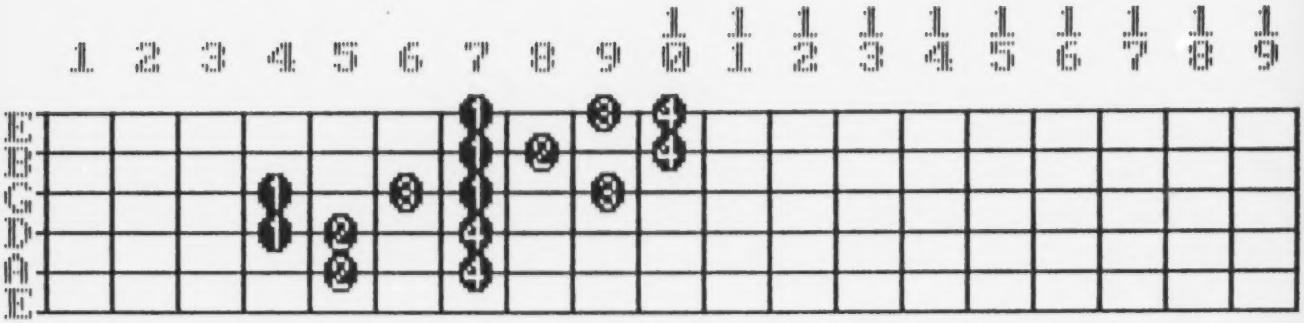
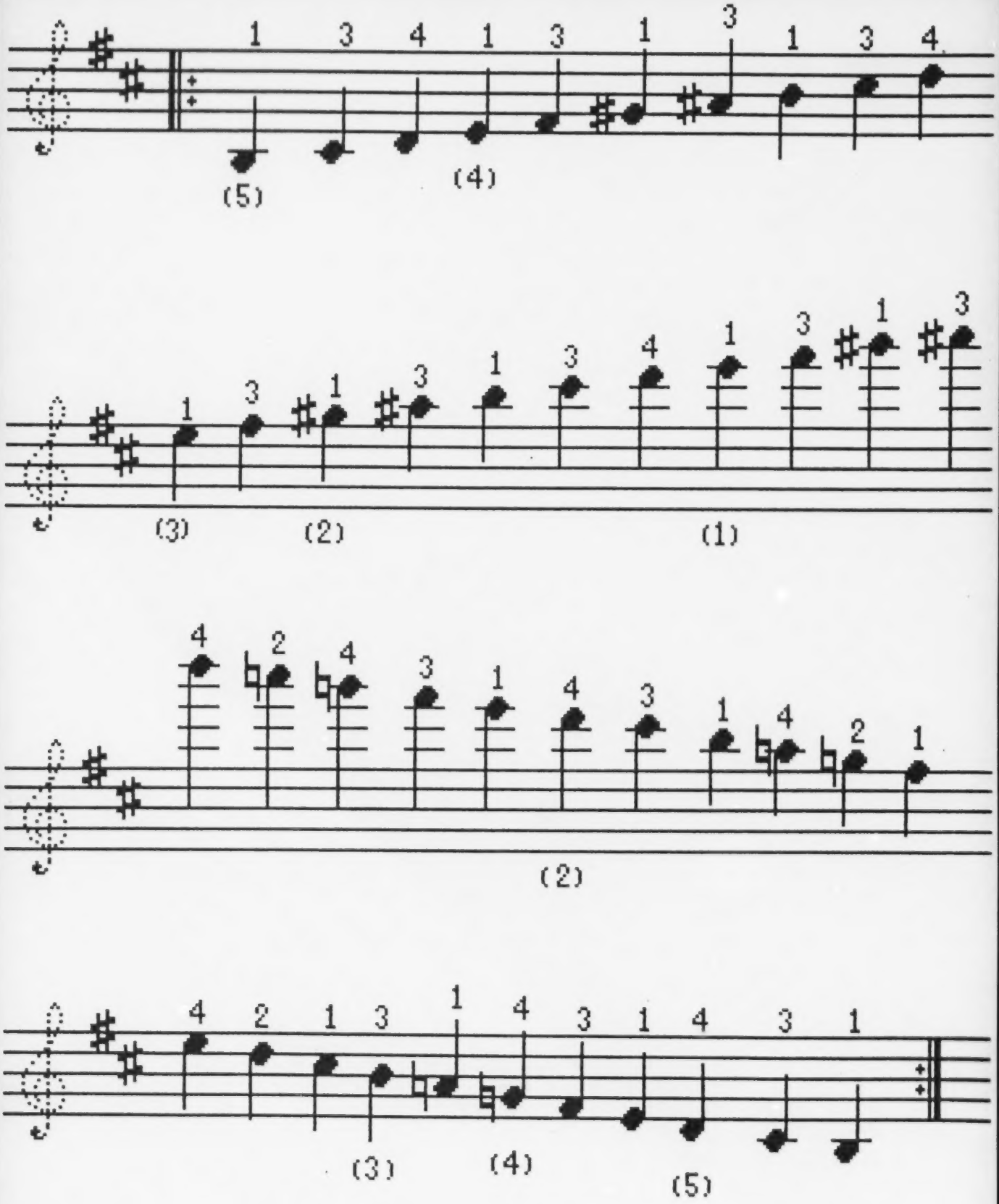
(4) (5)



D MAJOR SCALE ASCENDING AND DESCENDING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(5)
(4)
1 3 1 3 1 3 4 1 3 1 3
(3)
(2)
(1)
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(2)
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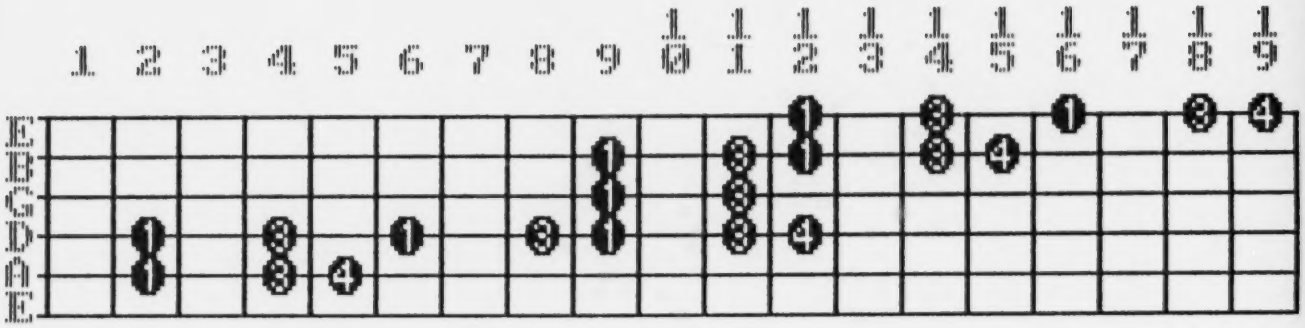
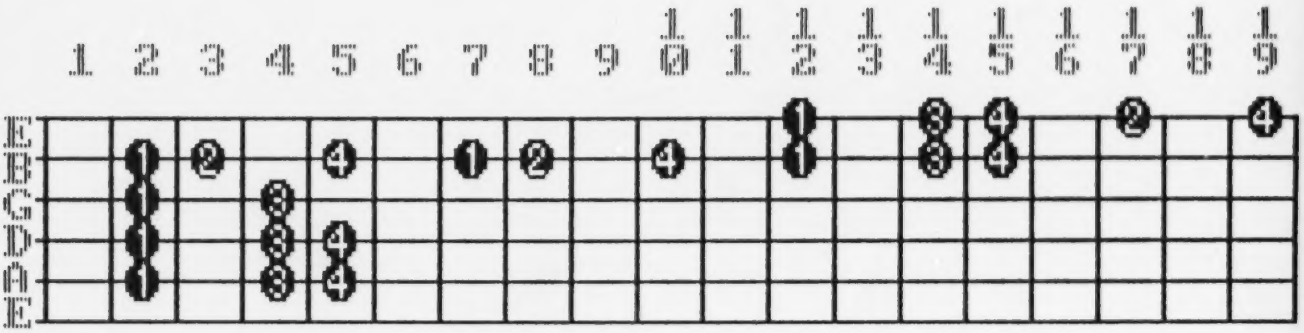
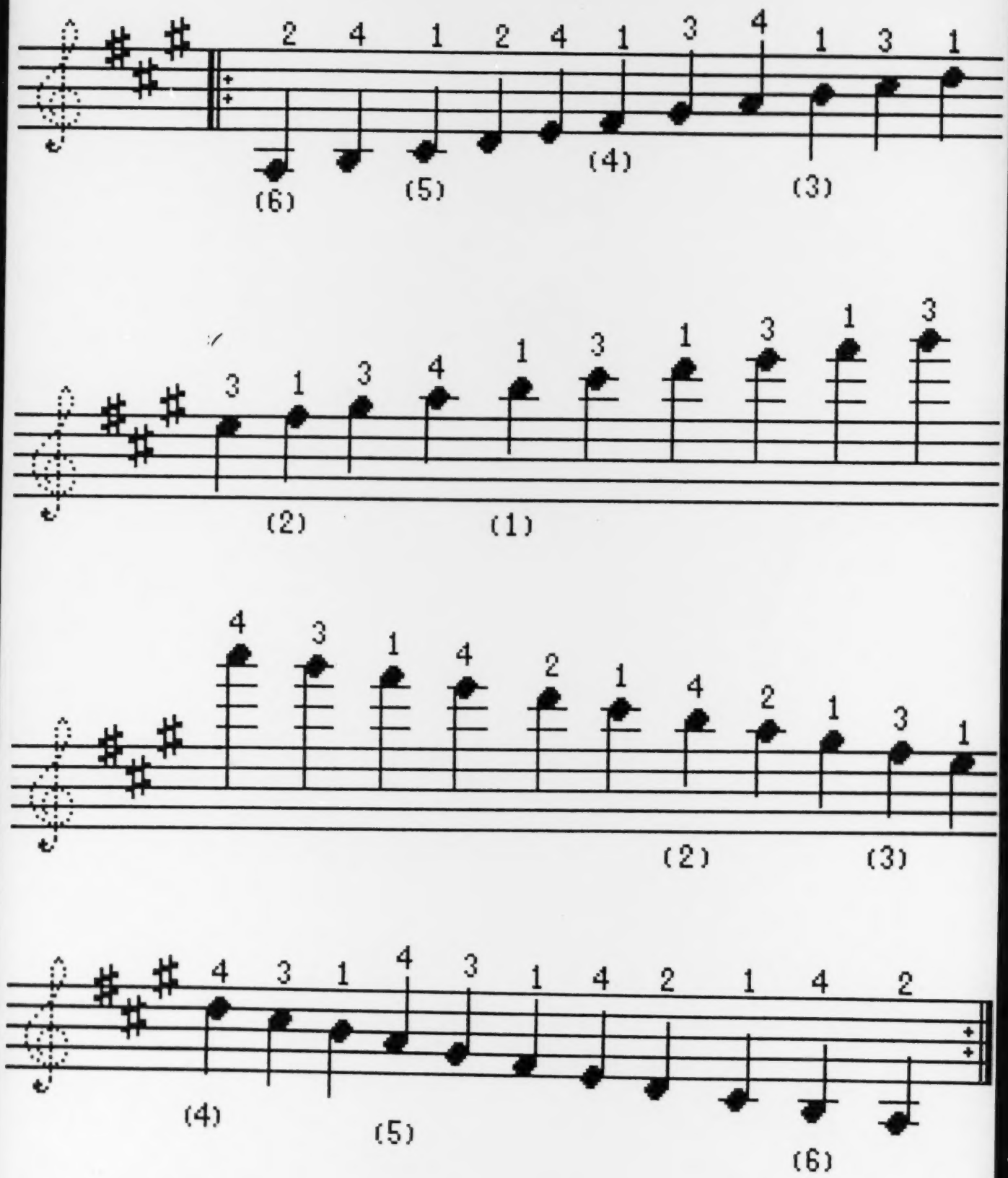
(3)
(4)
(5)



B MELODIC MINOR SCALE ASCENDING



B MELODIC MINOR SCALE DESCENDING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(6) (5) (4) (3)
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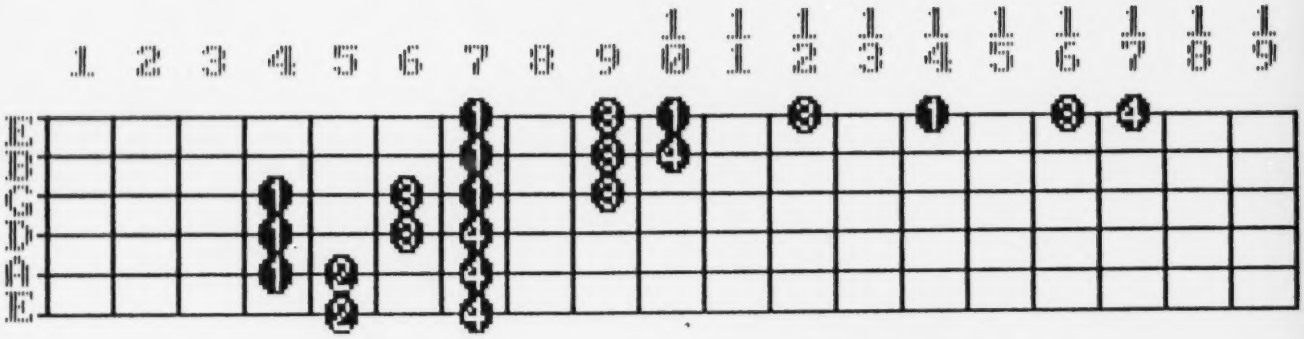
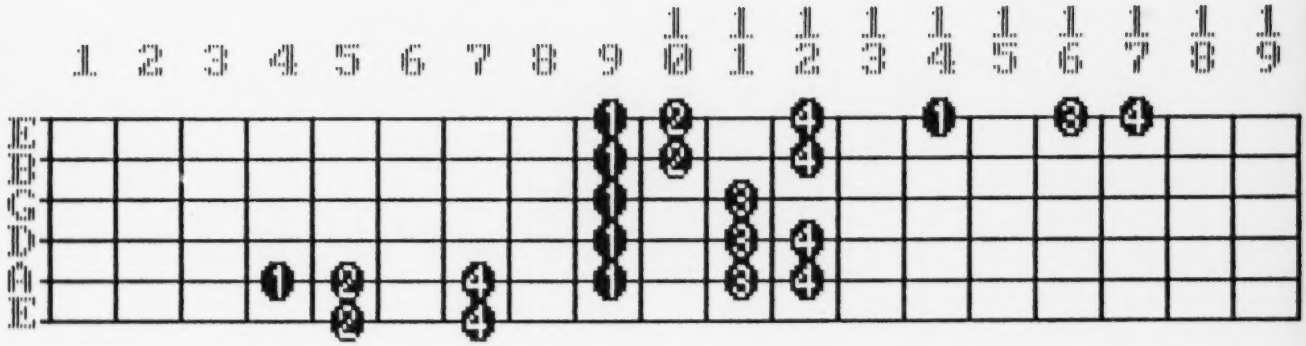
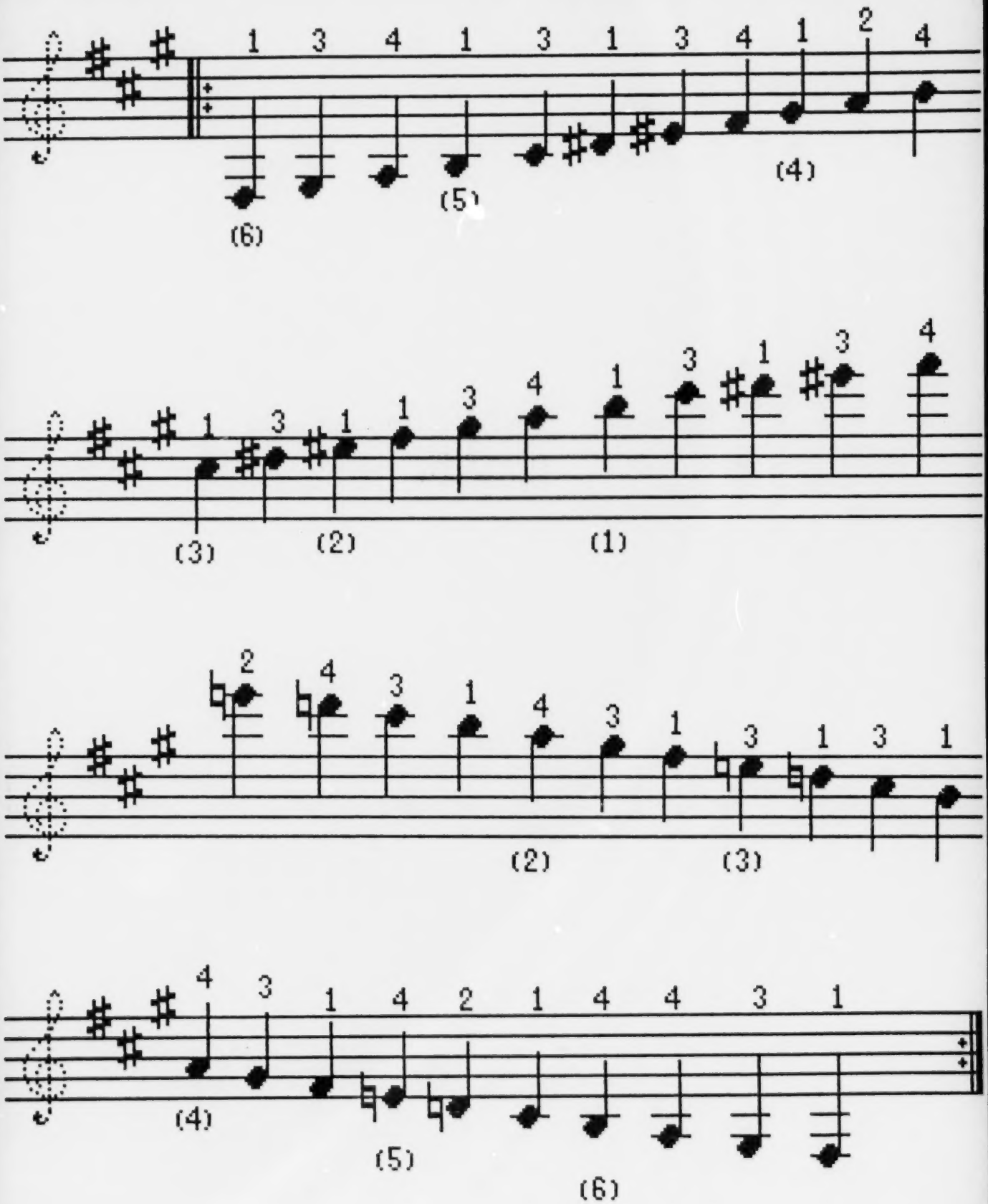
(4) (5) (6)



A MAJOR SCALE ASCENDING



A MAJOR SCALE DESCENDING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(6)
(5)
(4)
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(3)
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(3)
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(4)
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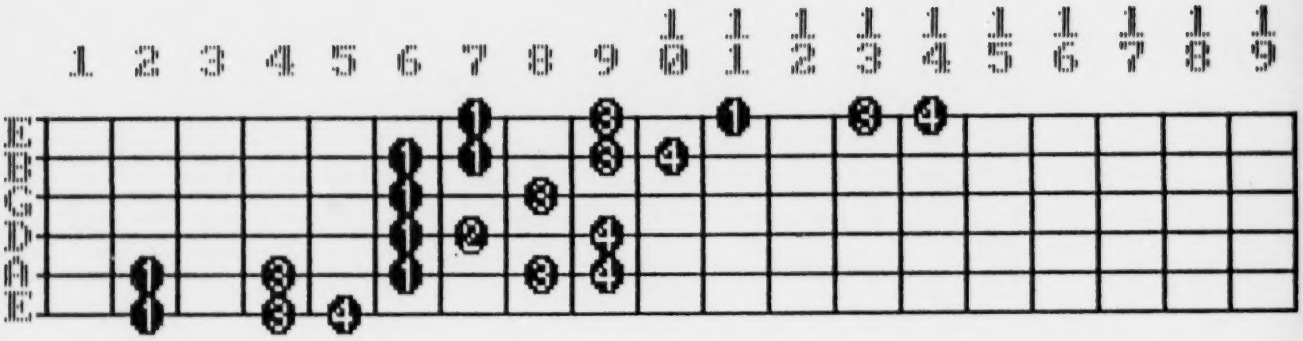
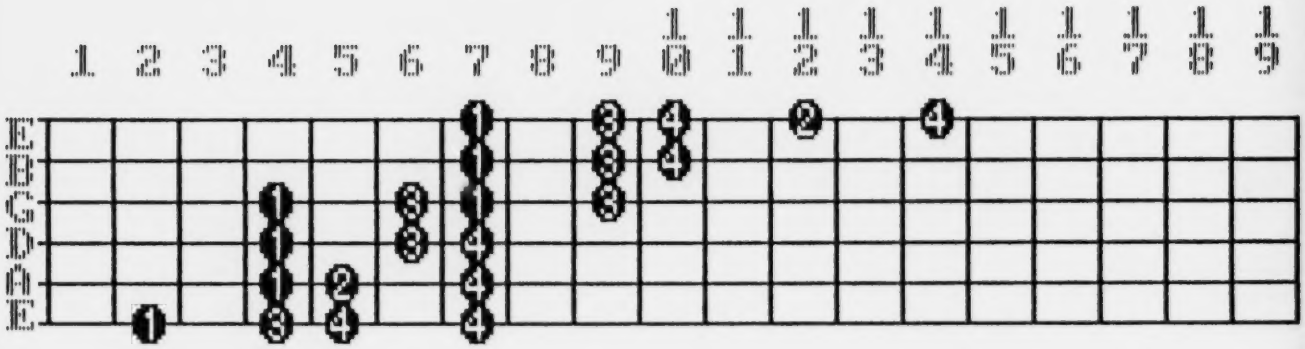
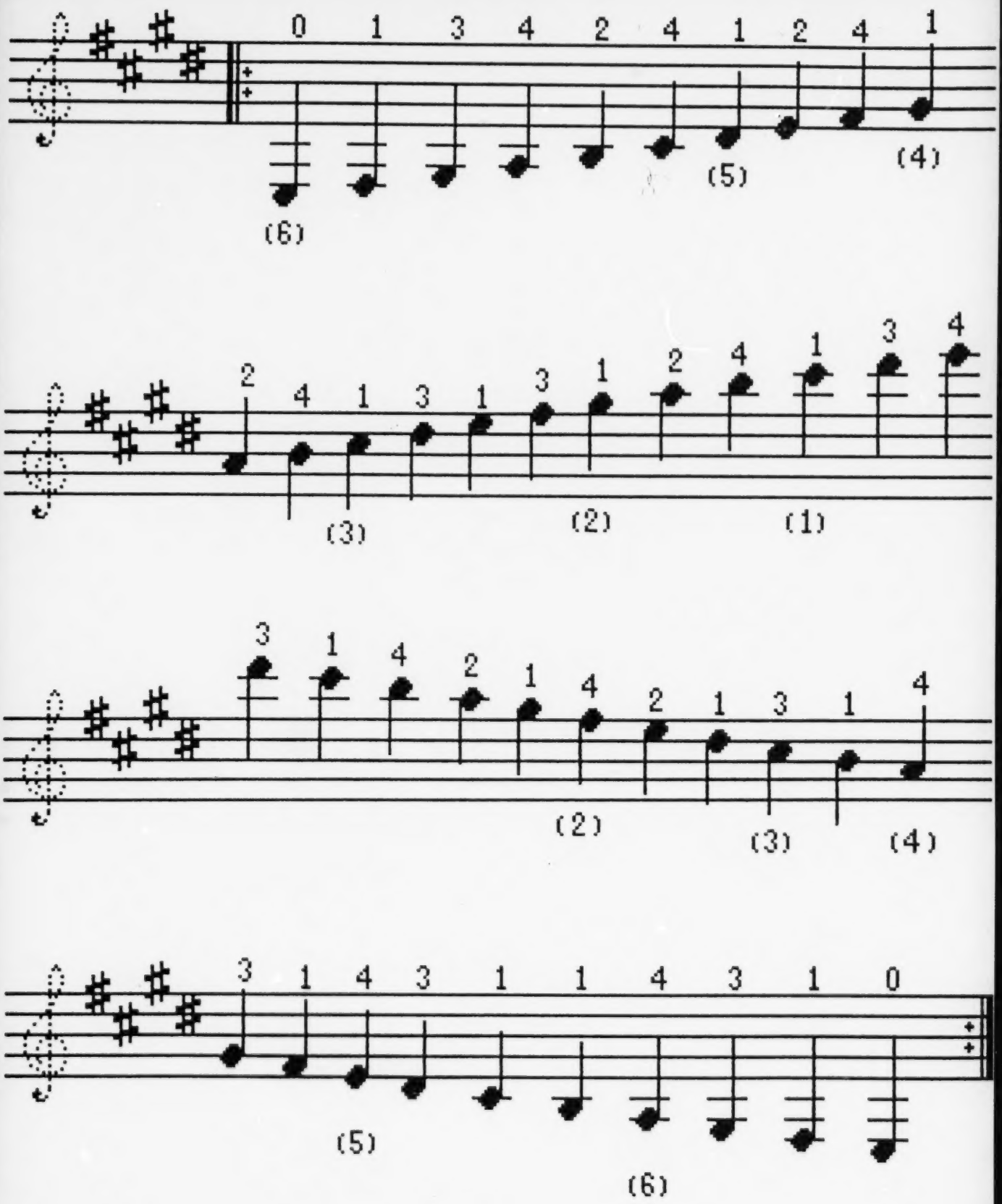
(6)



F# MELODIC MINOR SCALE ASCENDING



F# MELODIC MINOR SCALE DESCENDING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(6)
(5)
(4)
2 4 1 3 1 3 1 2 4 1 3 4
(3)
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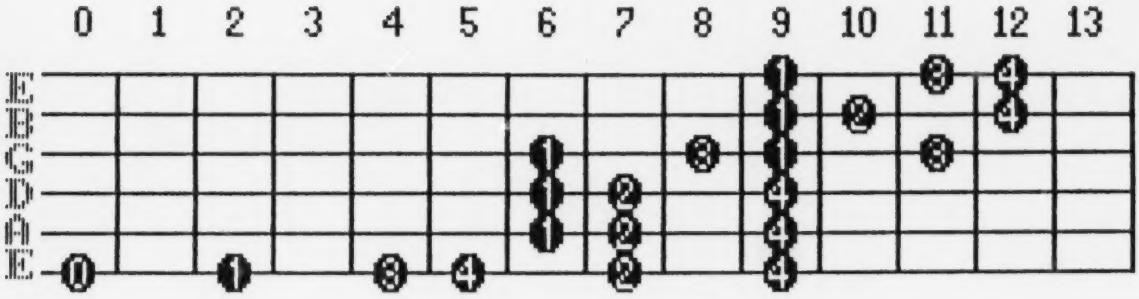
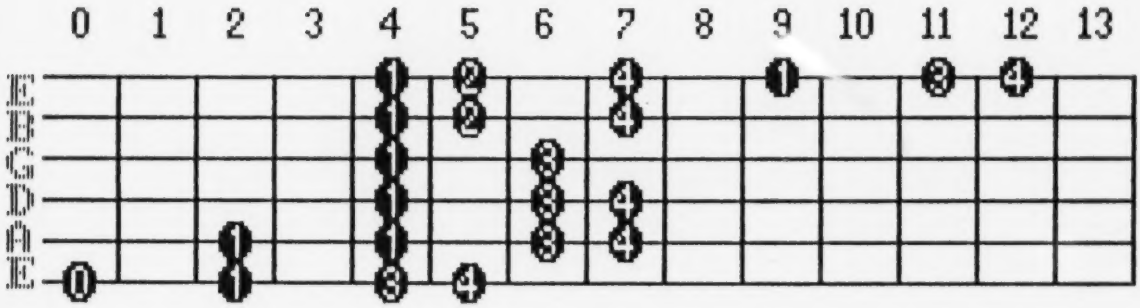
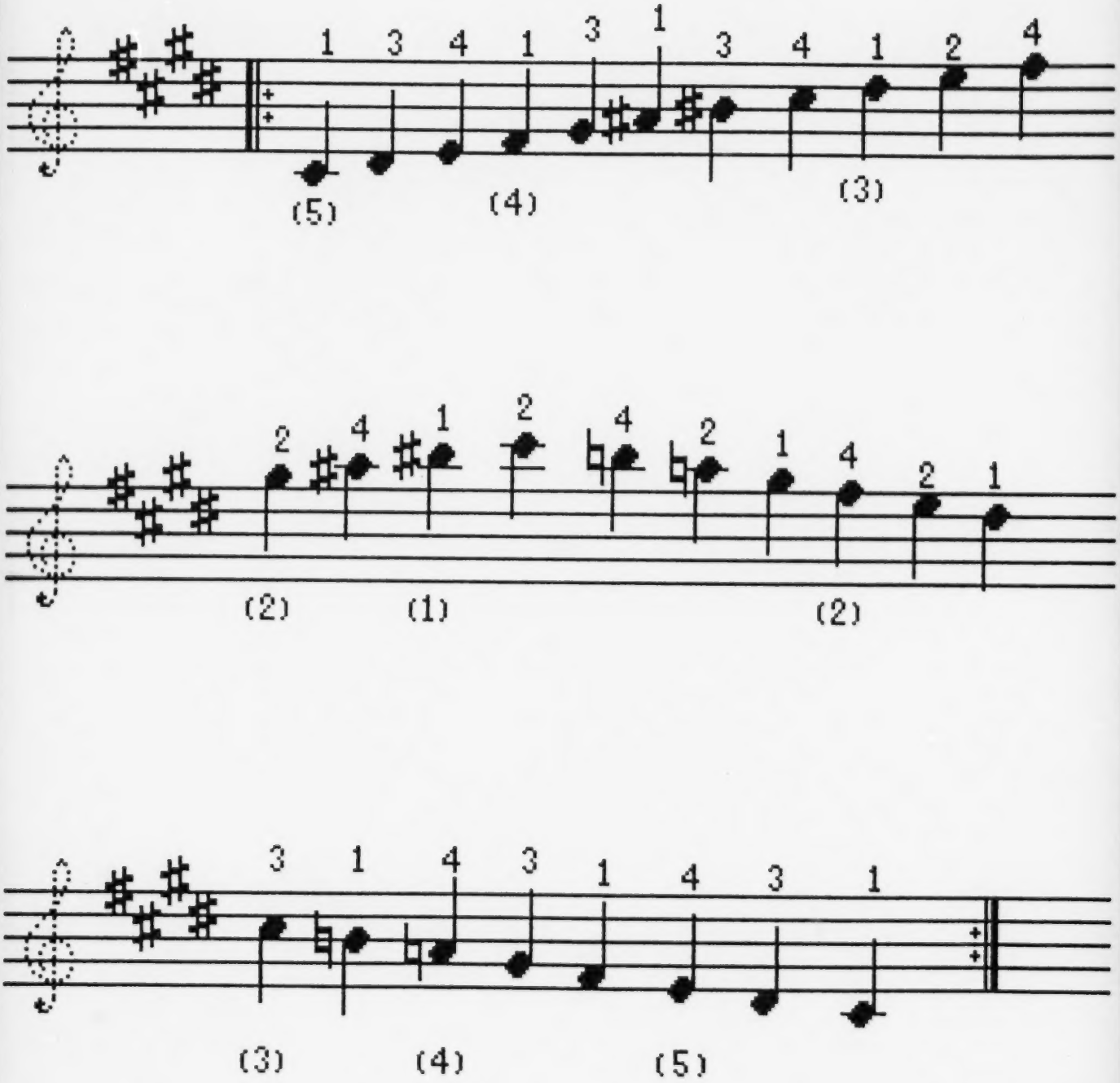


E MAJOR SCALE ASCENDING



E MAJOR SCALE DESCENDING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(2) (1) (2)
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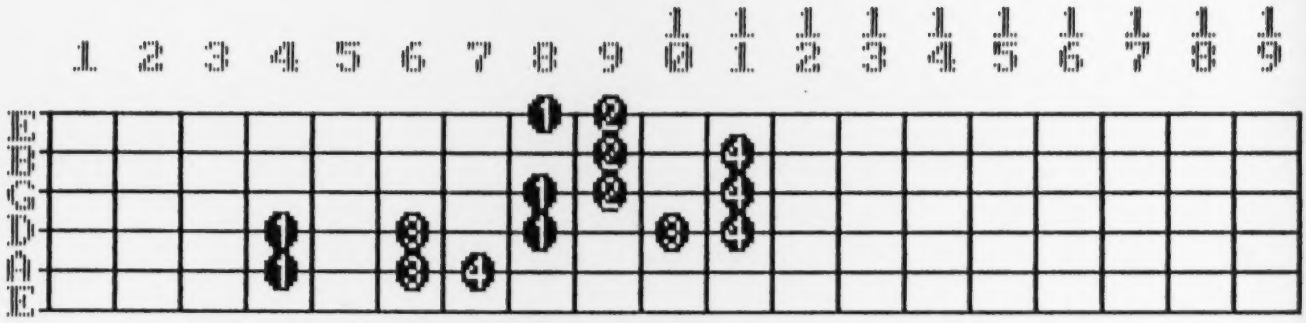
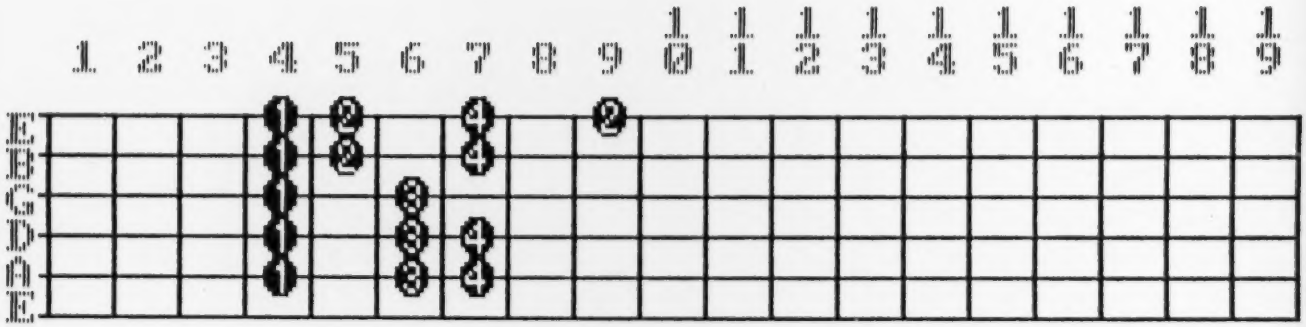
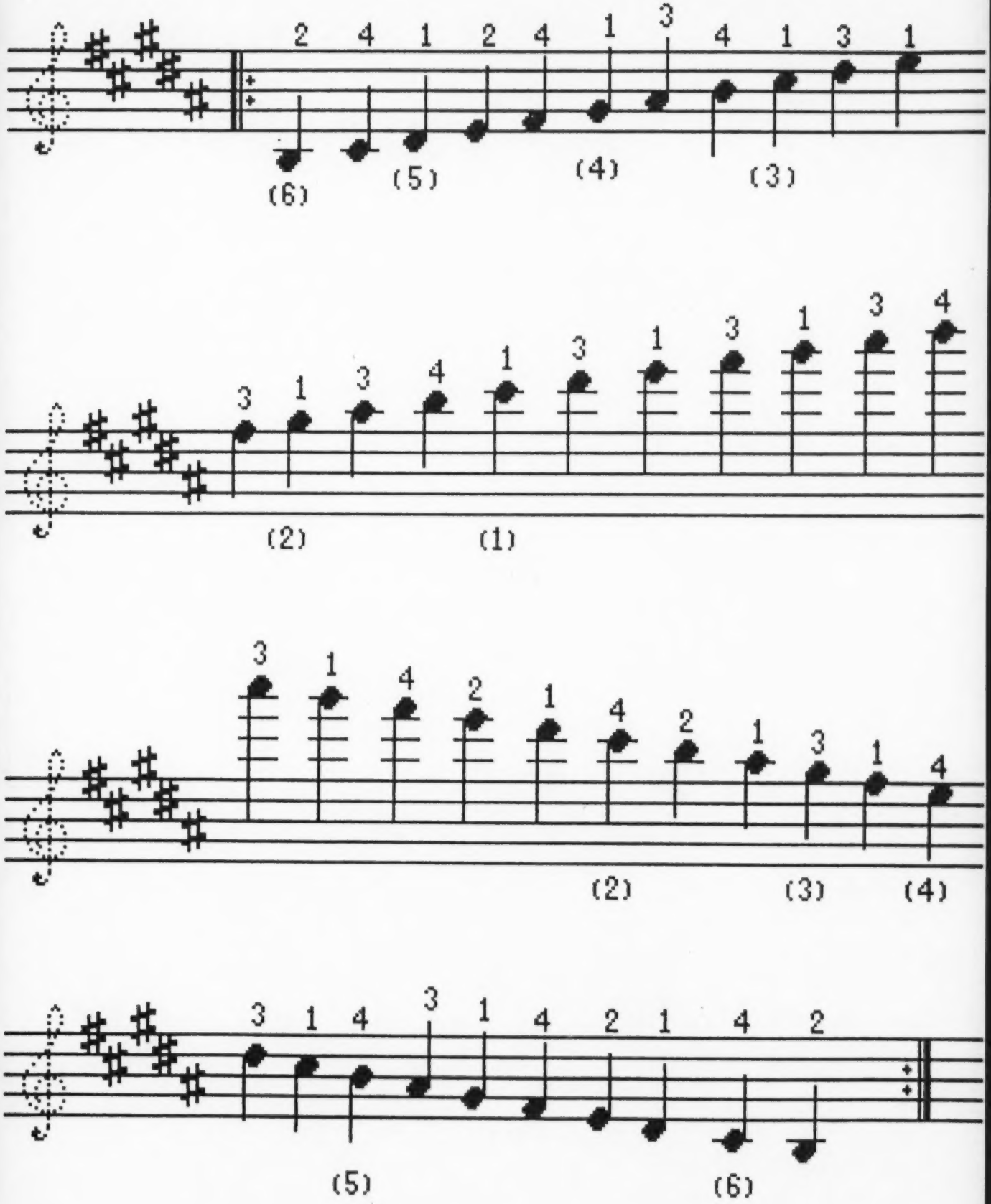


C# MELODIC MINOR SCALE ASCENDING



C# MELODIC MINOR SCALE DESCENDING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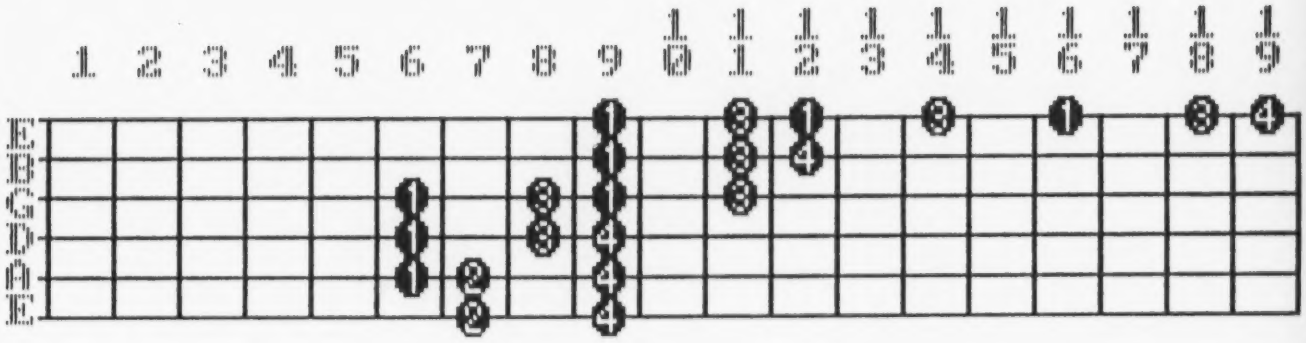
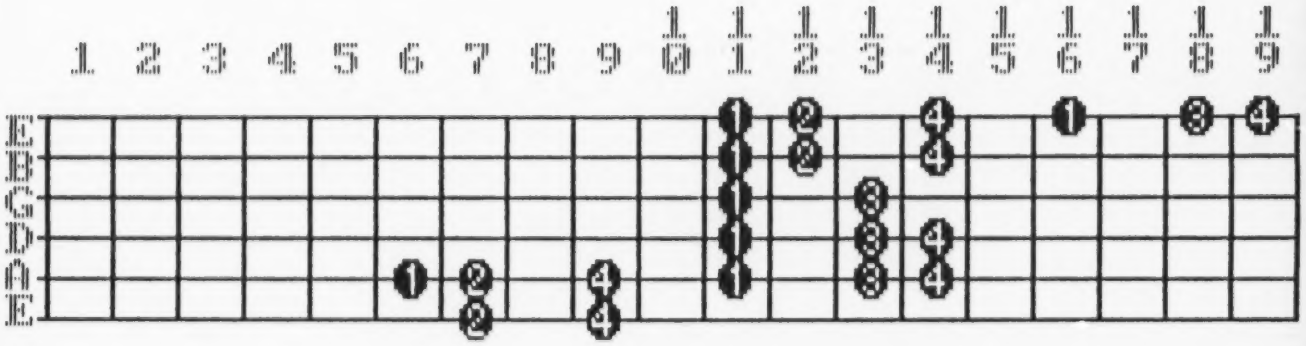
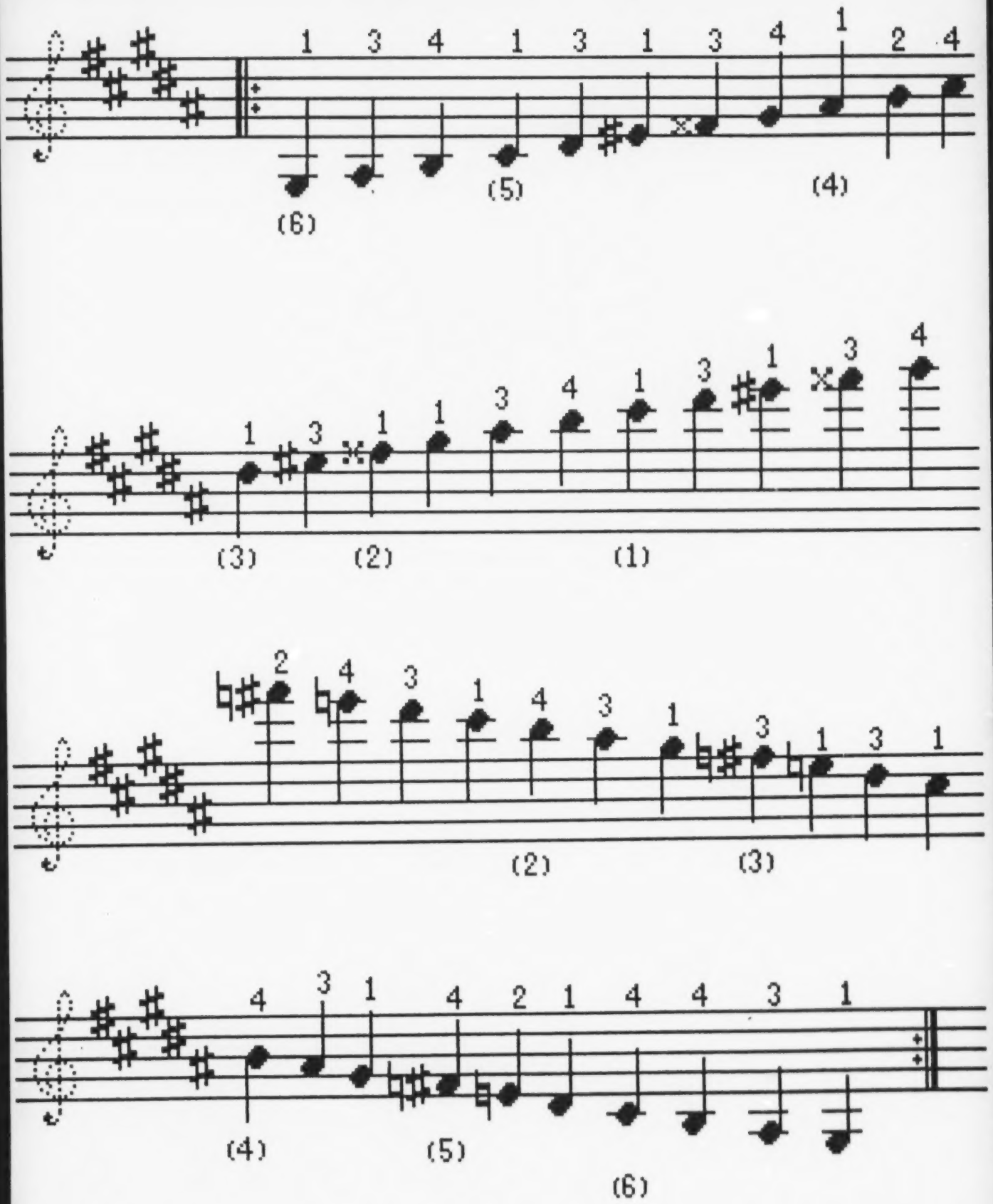


B MAJOR SCALE ASCENDING



B MAJOR SCALE DESCENDING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(2) (3)
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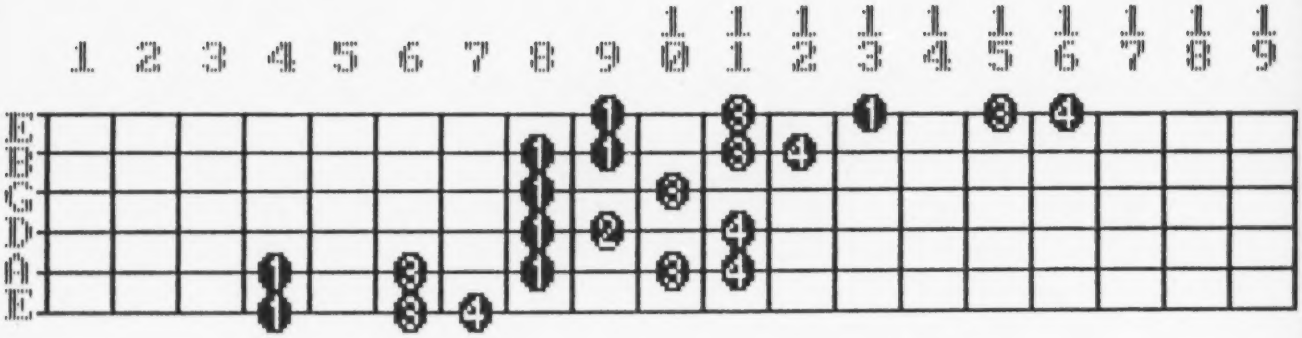
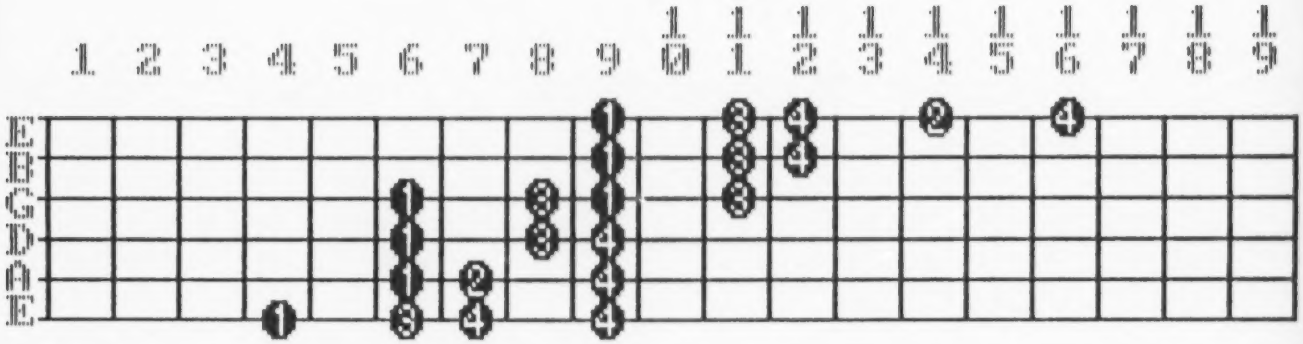
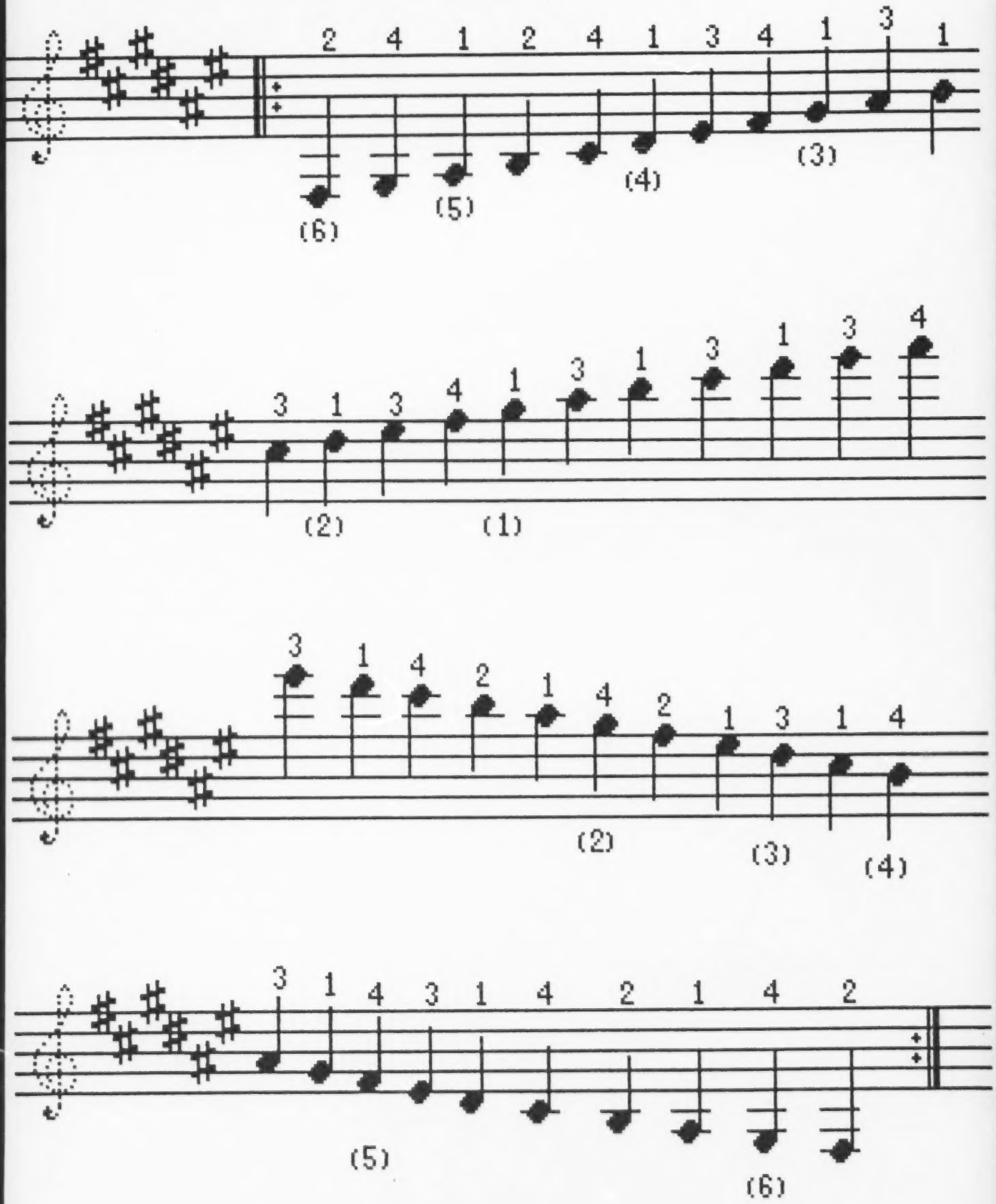
(4) (5) (6)



G# MELODIC MINOR SCALE ASCENDING



G# MELODIC MINOR SCALE DESCENDING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(6) (5) (4) (3)
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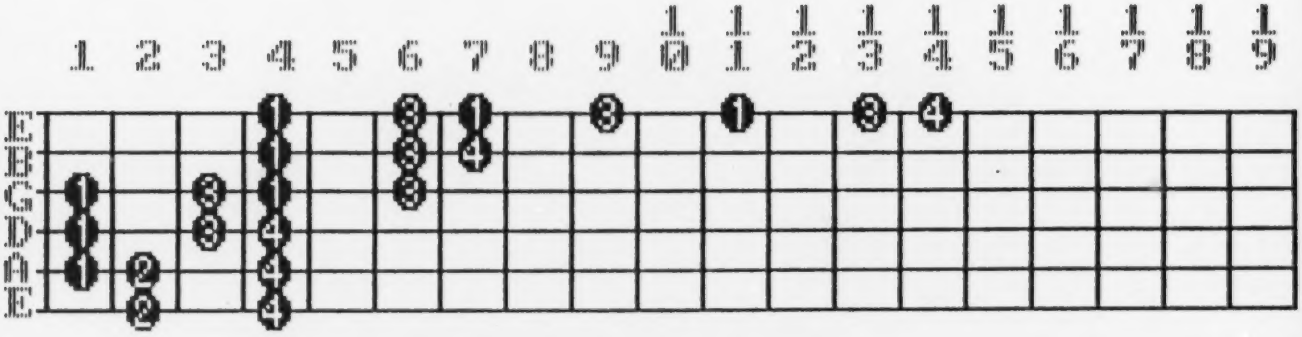
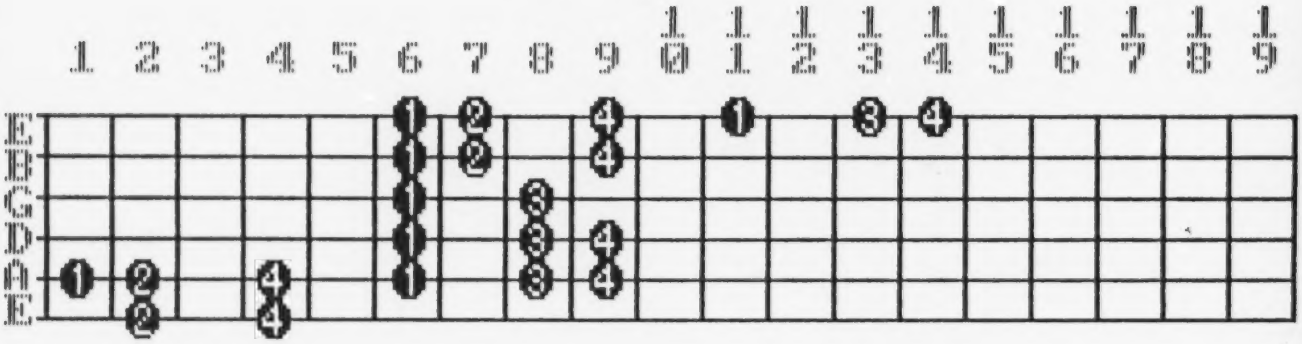
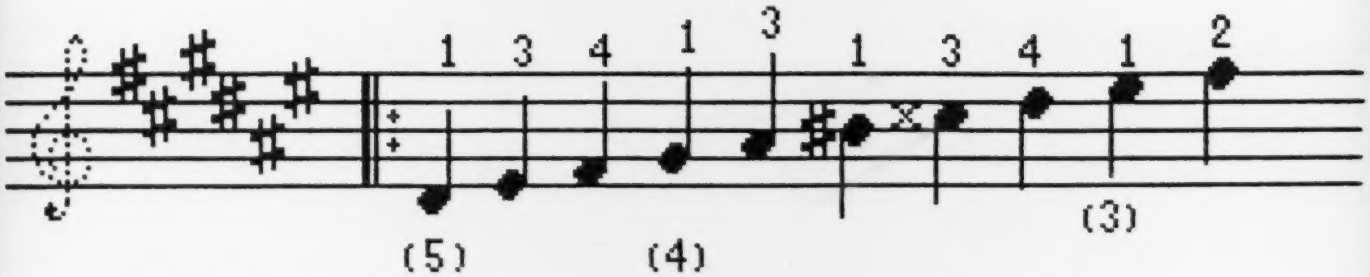
(2) (3) (4)
3 1 4 3 1 4 2 1 4 2
(5) (6)



F# MAJOR SCALE ASCENDING



F# MAJOR SCALE DESCENDING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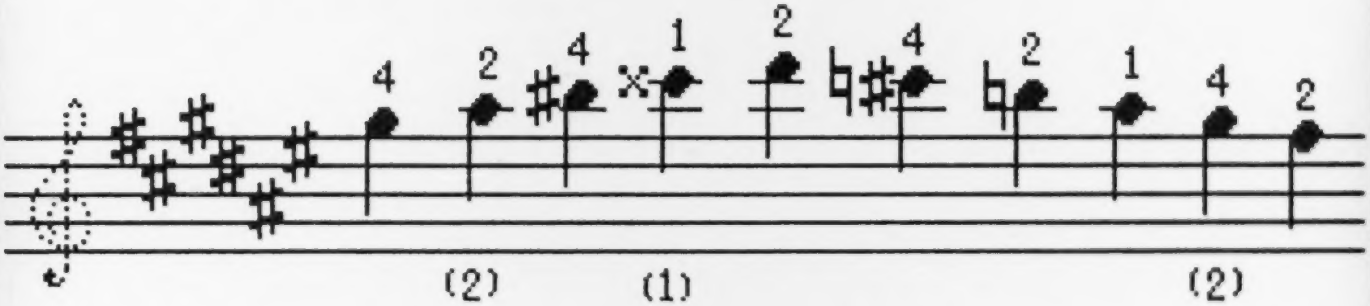
(5) (4) (3)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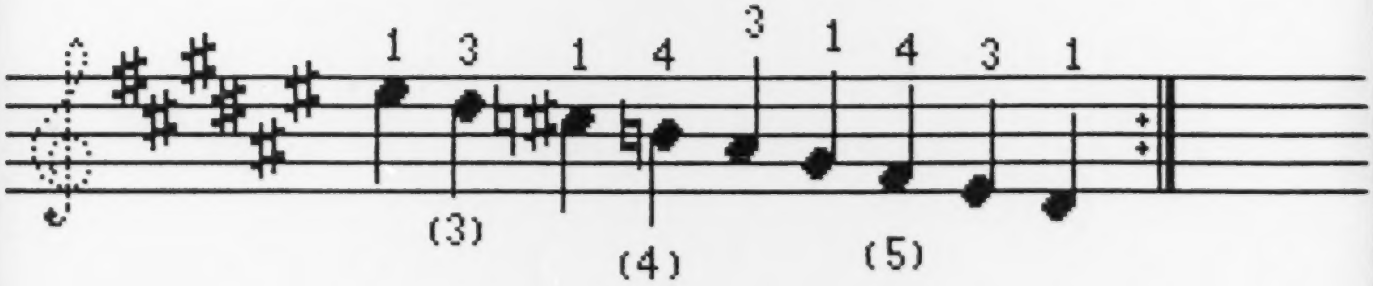
(2) (1) (2)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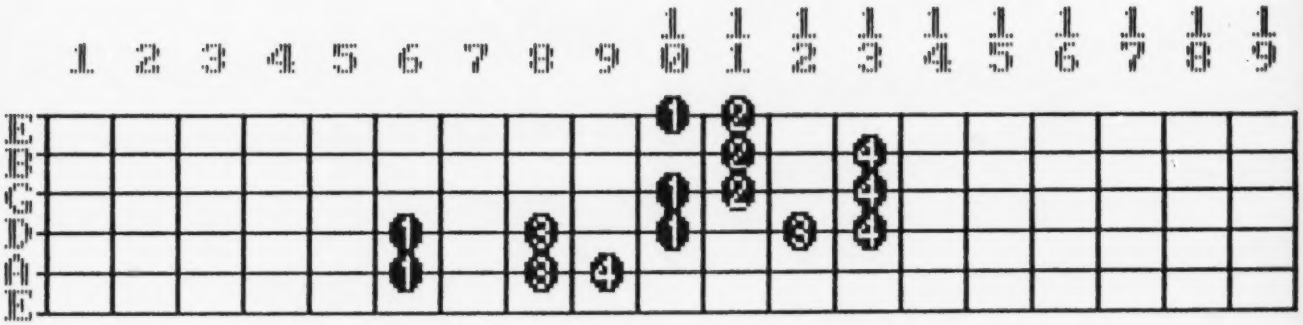
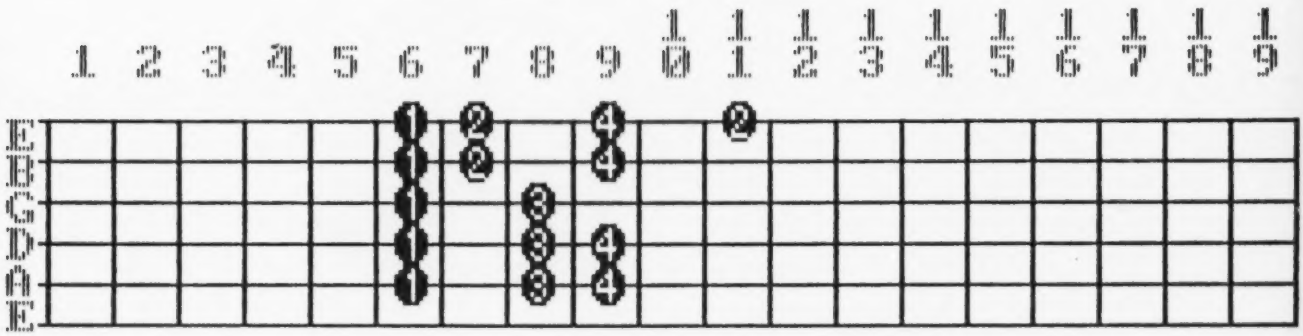
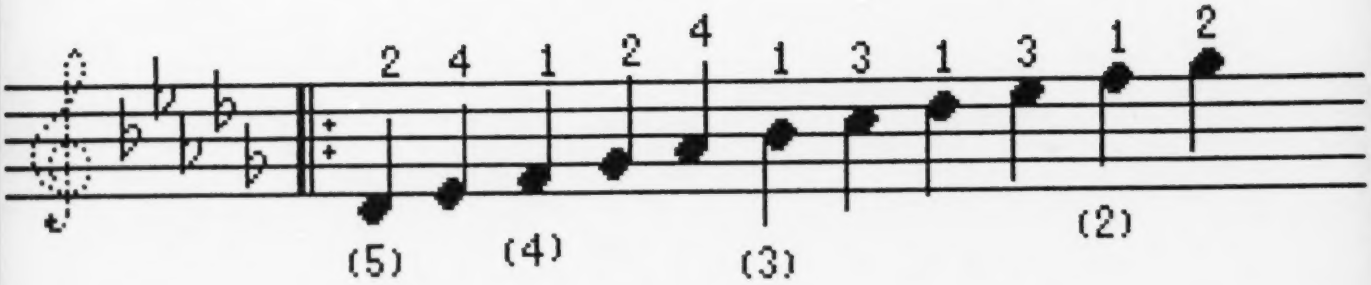
(3) (4) (5)



D# MELODIC MINOR SCALE ASCENDING



D# MELODIC MINOR SCALE DESCENDING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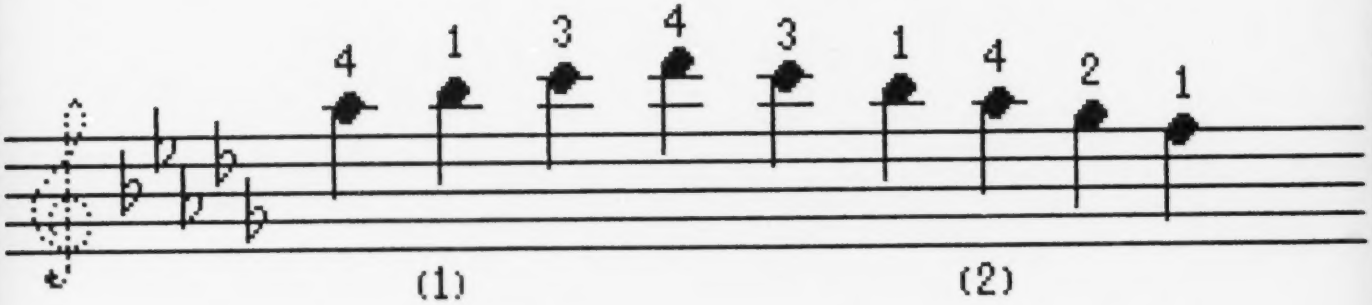
(5) (4) (3) (2)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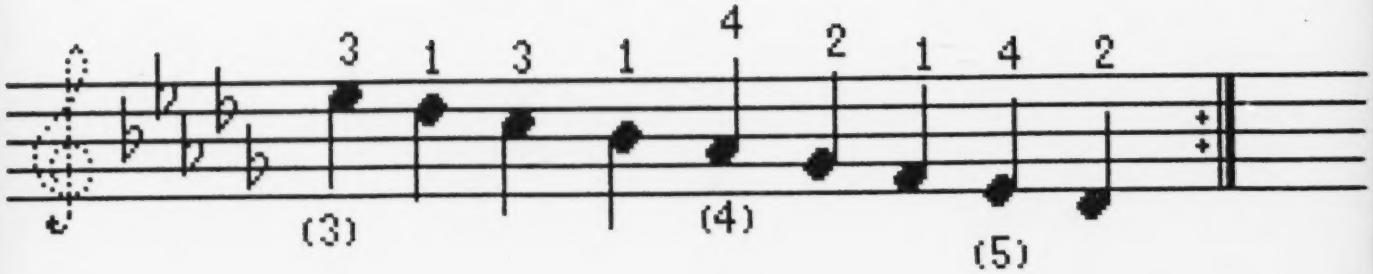
(1) (2)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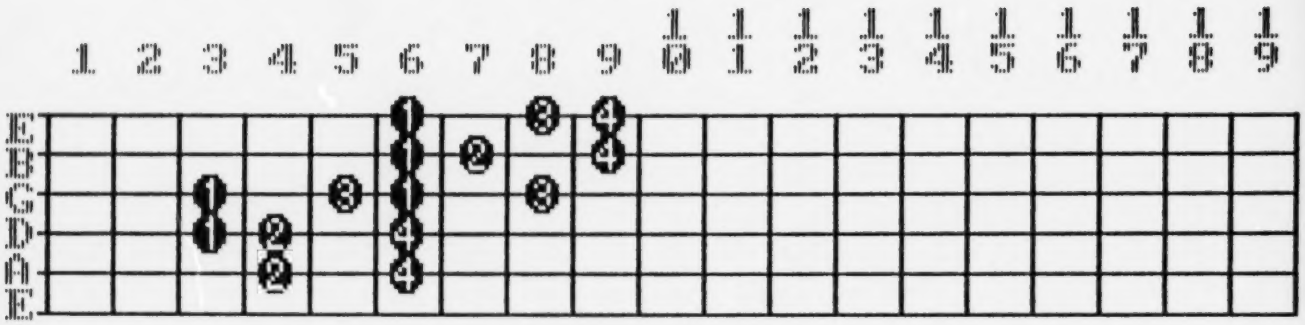
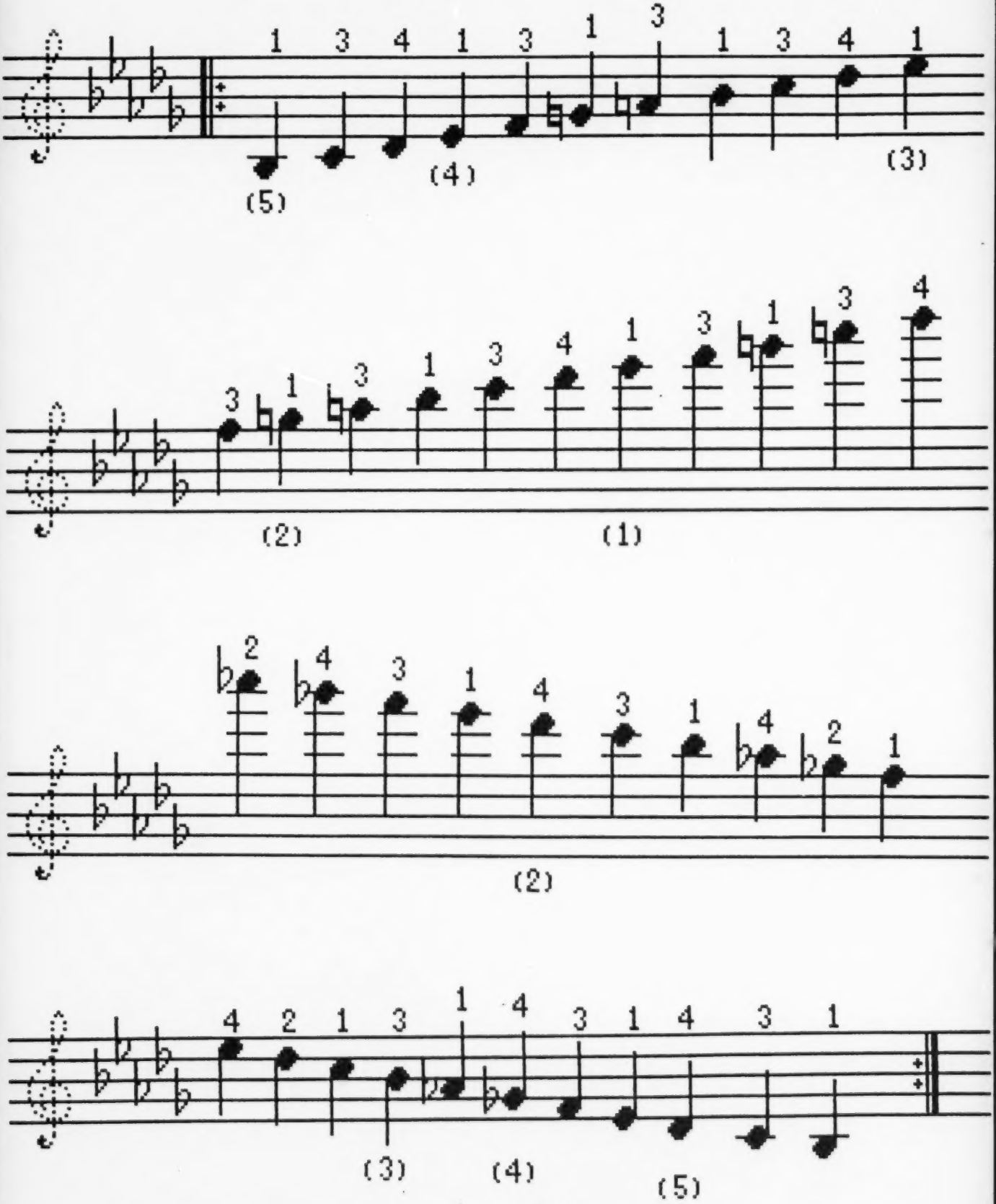
(3) (4) (5)



D♭ MAJOR SCALE ASCENDING AND DESCENDING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(5)
(4)
(3)
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(2)
(1)
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(2)
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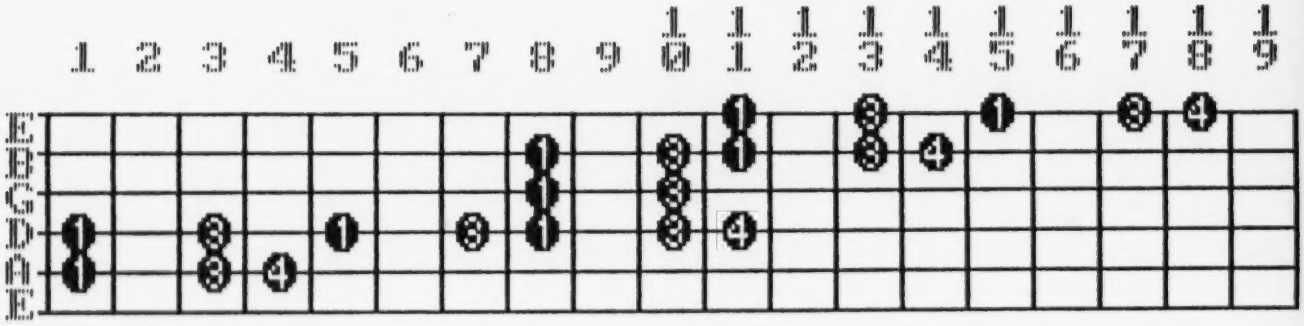
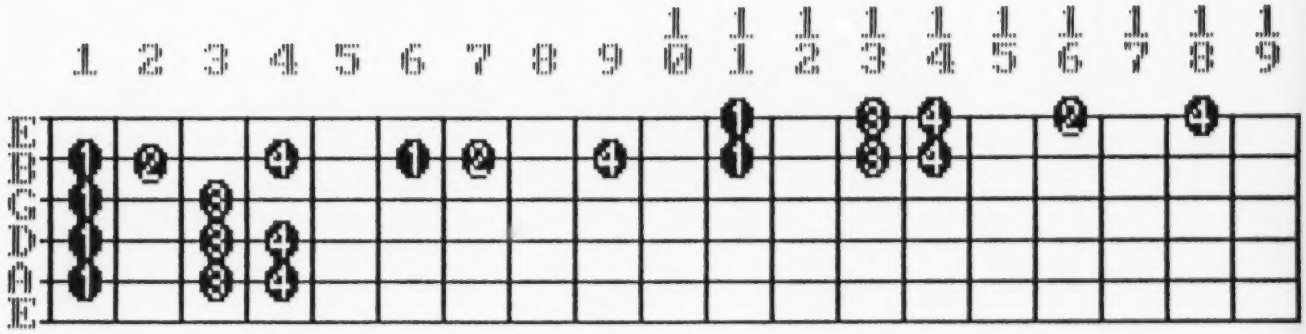
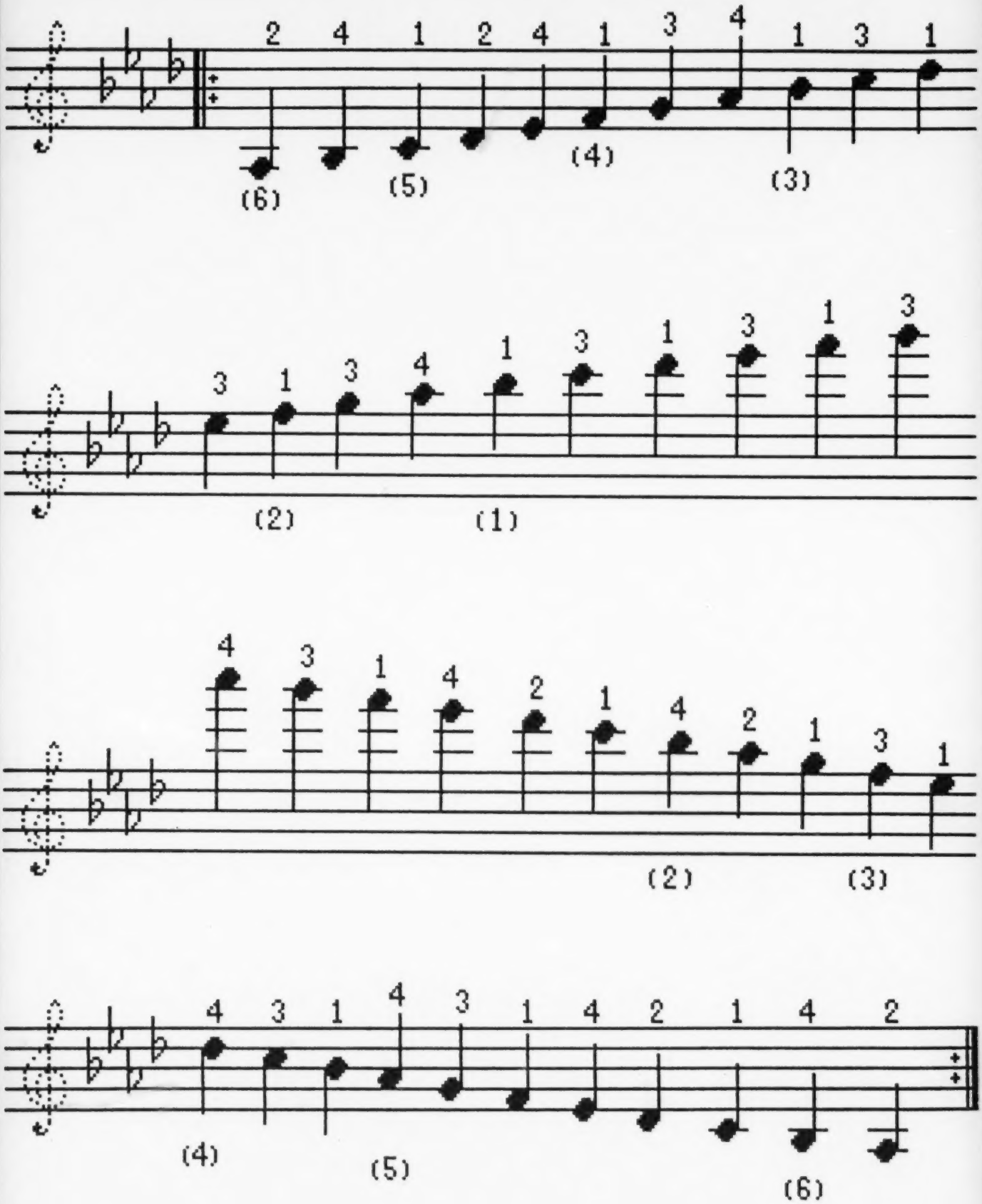
(3)
(4)
(5)



B♭ MELODIC MINOR SCALE ASCENDING



B♭ MELODIC MINOR SCALE DESCENDING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(6) (5) (4) (3)
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(2) (1)
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(2) (3)
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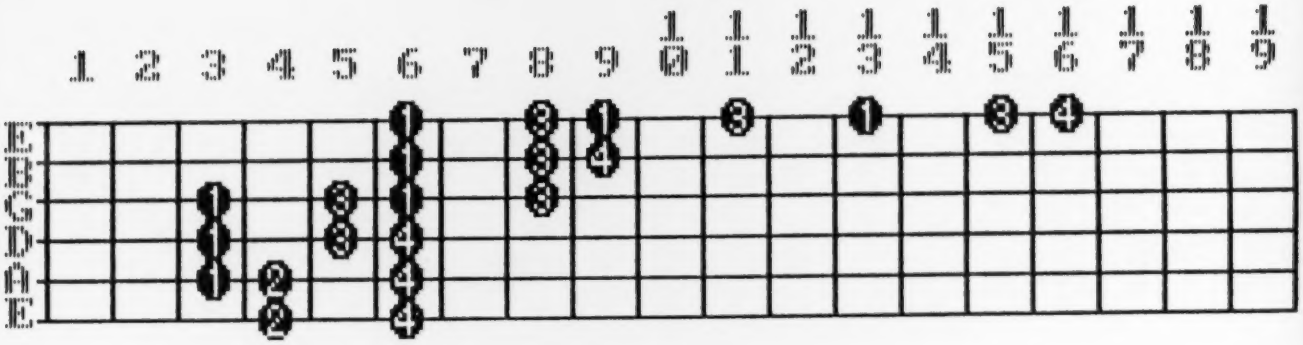
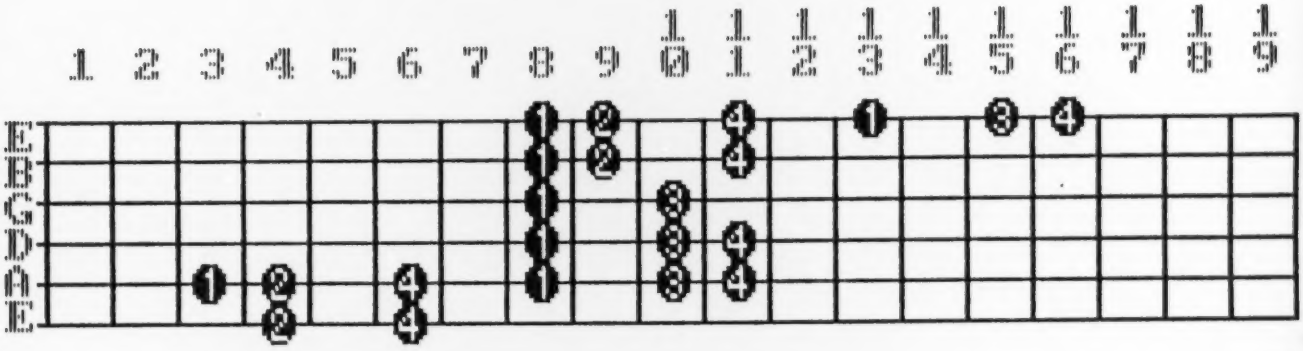
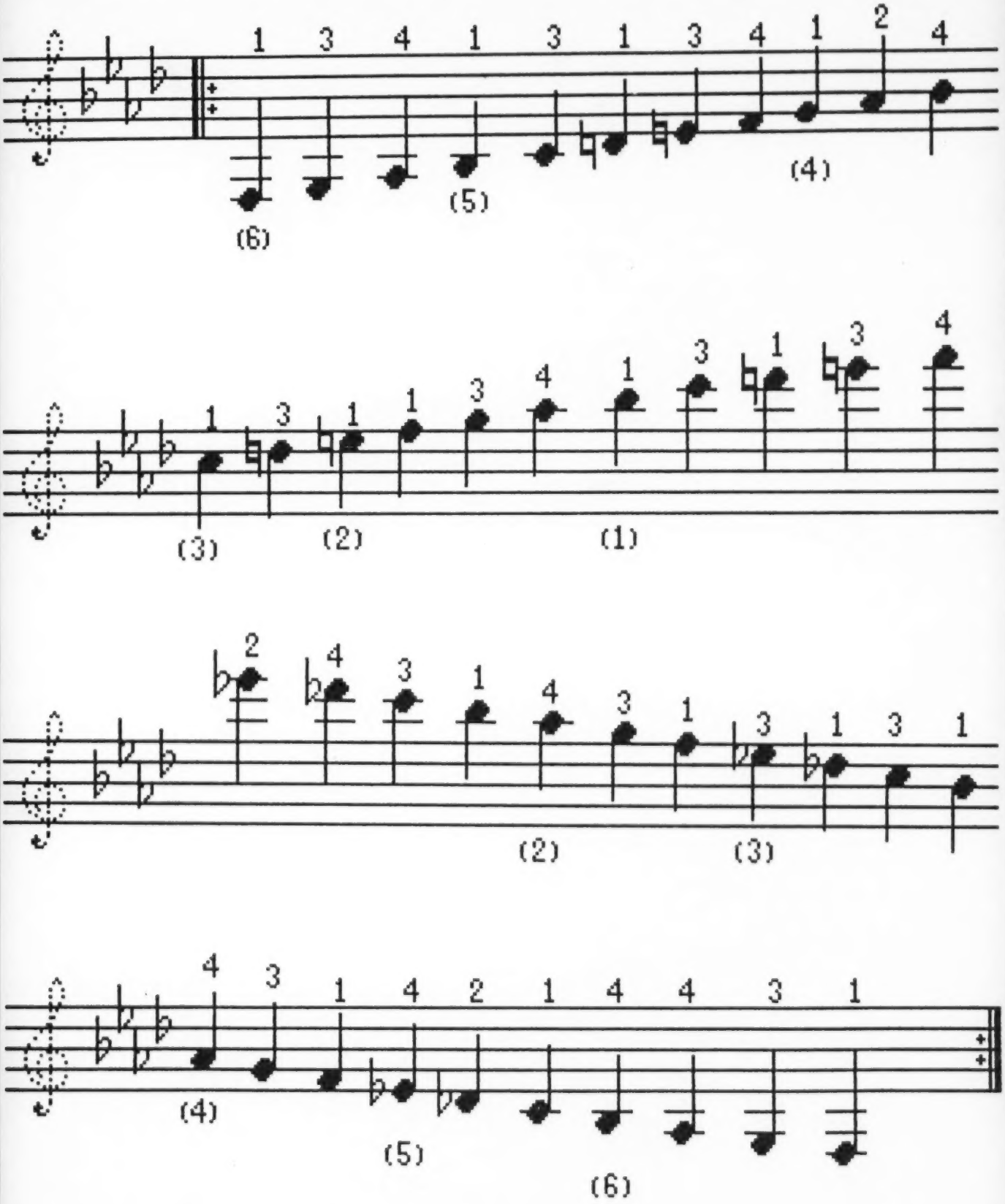
(4) (5) (6)



A♭ MAJOR SCALE ASCENDING



A♭ MAJOR SCALE DESCENDING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(6)
(5)
(4)
1 3 1 1 3 4 1 3 1 3 4
(3)
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(1)
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(2)
(3)
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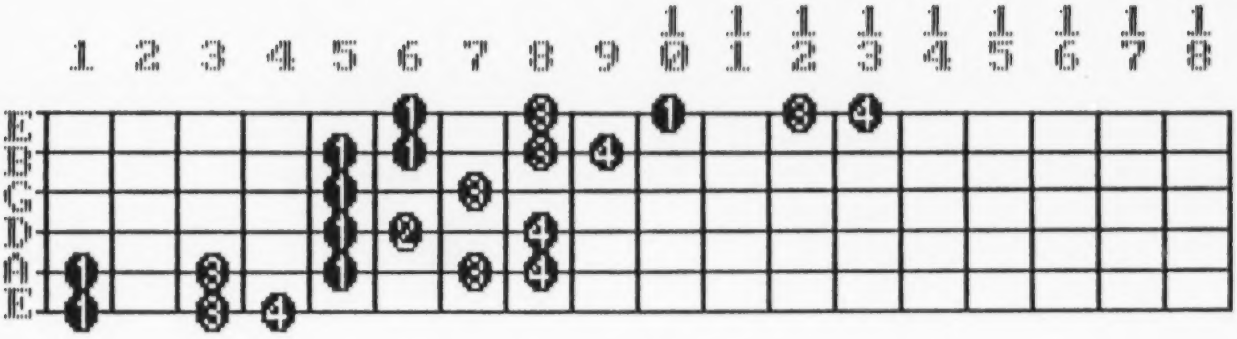
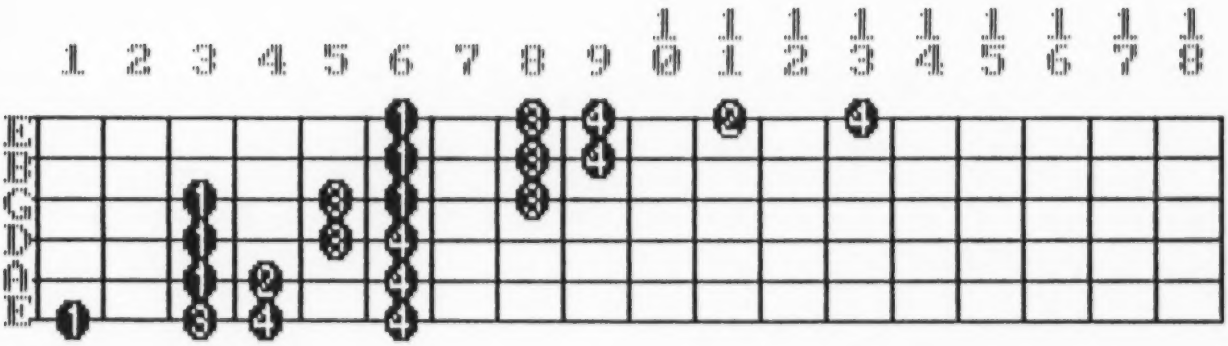
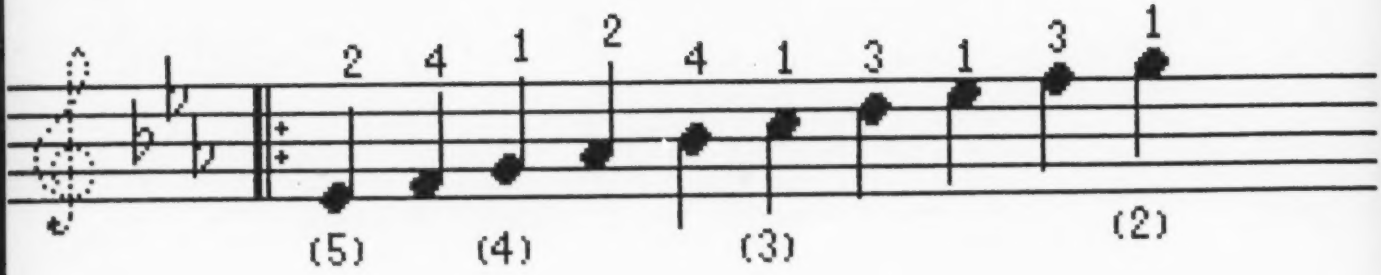
(4)
(5)
(6)



F MELODIC MINOR SCALE ASCENDING



F MELODIC MINOR SCALE DESCENDING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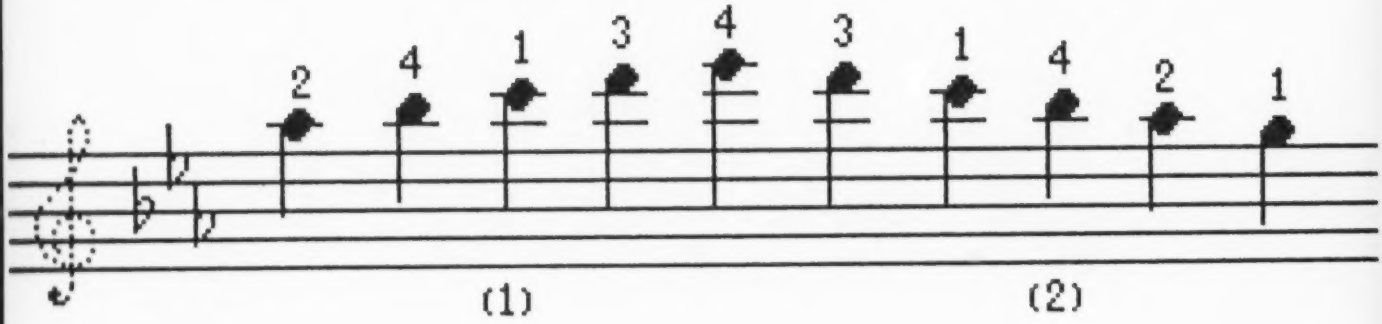
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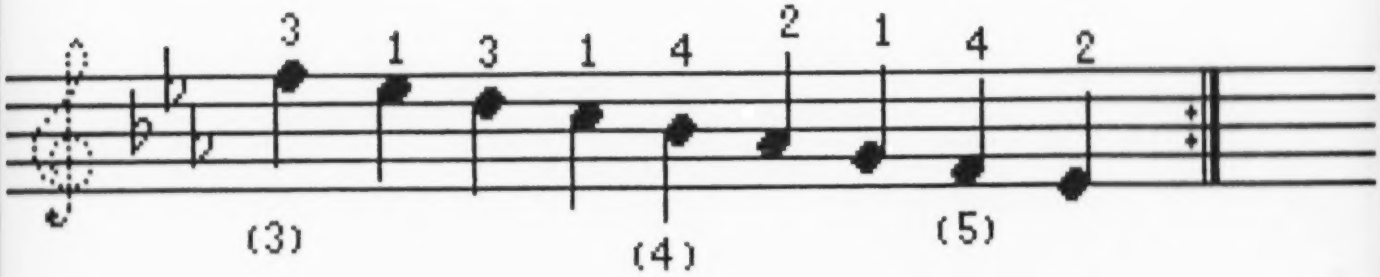
(1) (2)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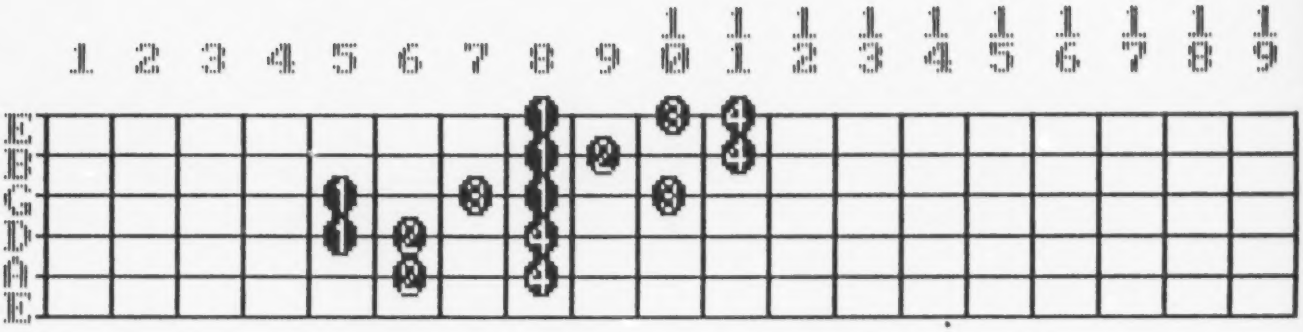
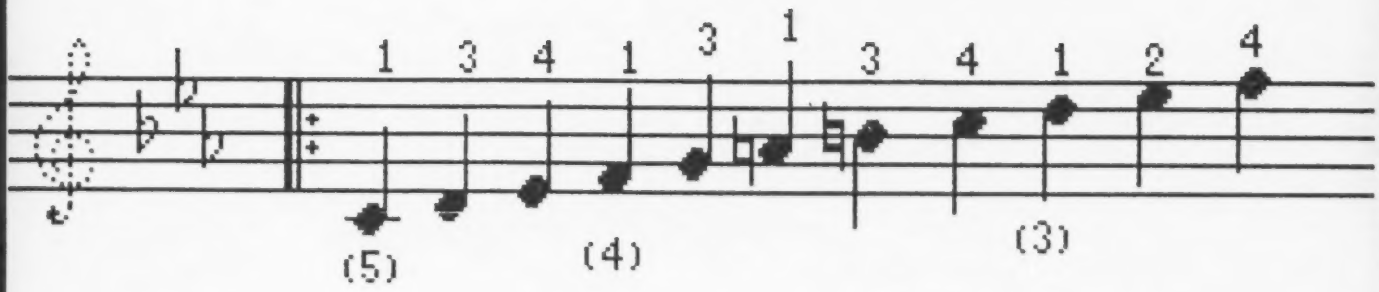
(3) (4) (5)



E♭ MAJOR SCALE ASCENDING AND DESCENDING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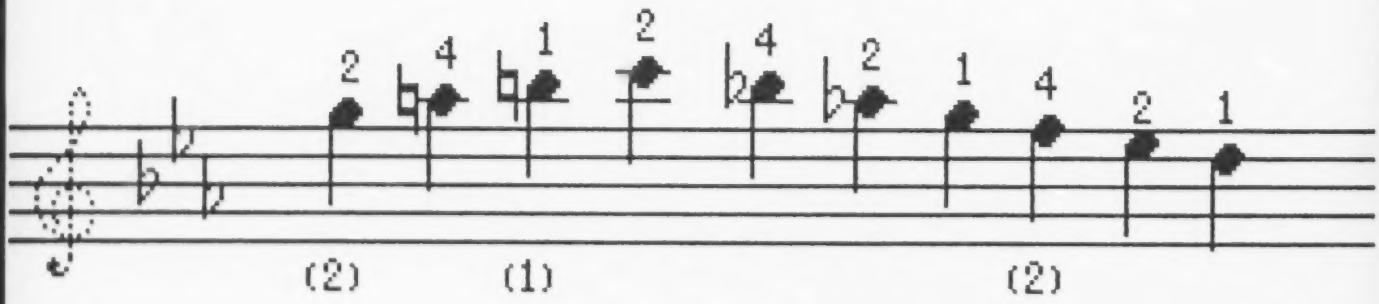
(5) (4) (3)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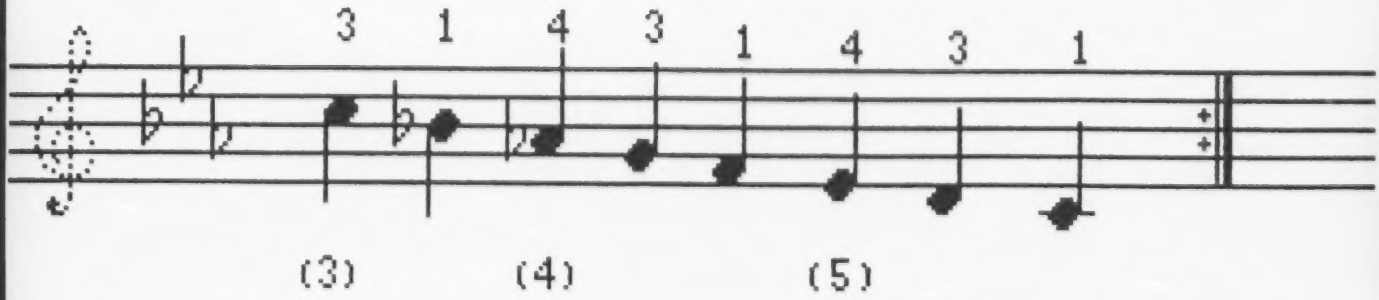
(2) (1) (2)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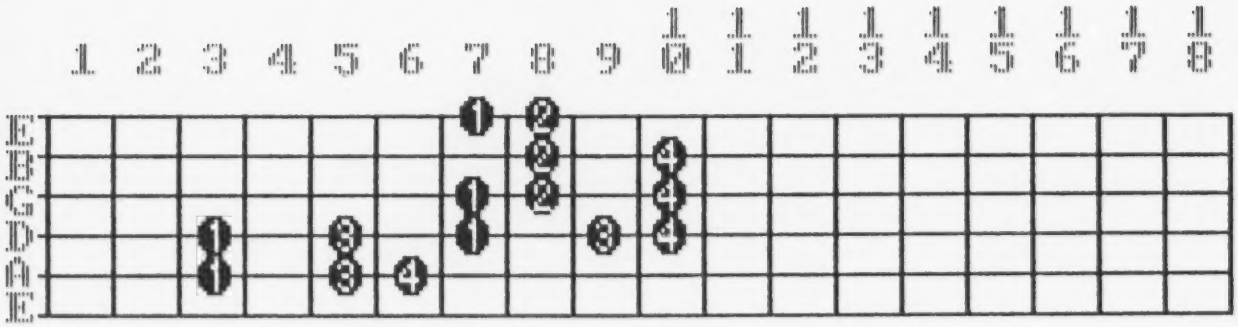
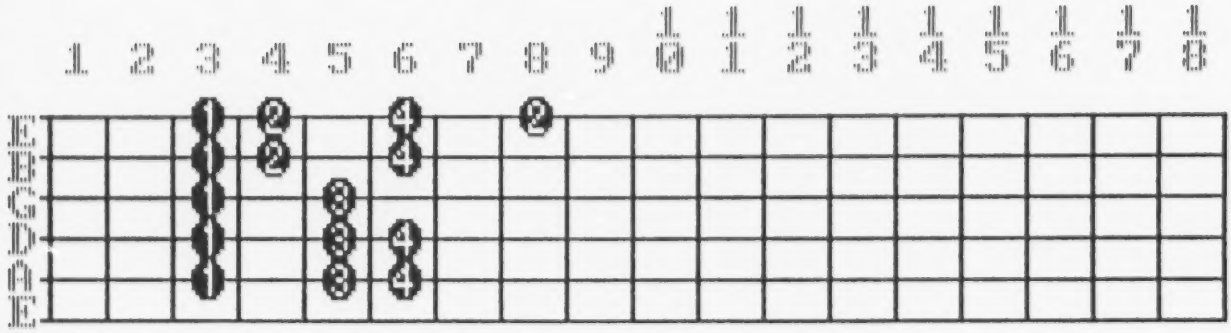
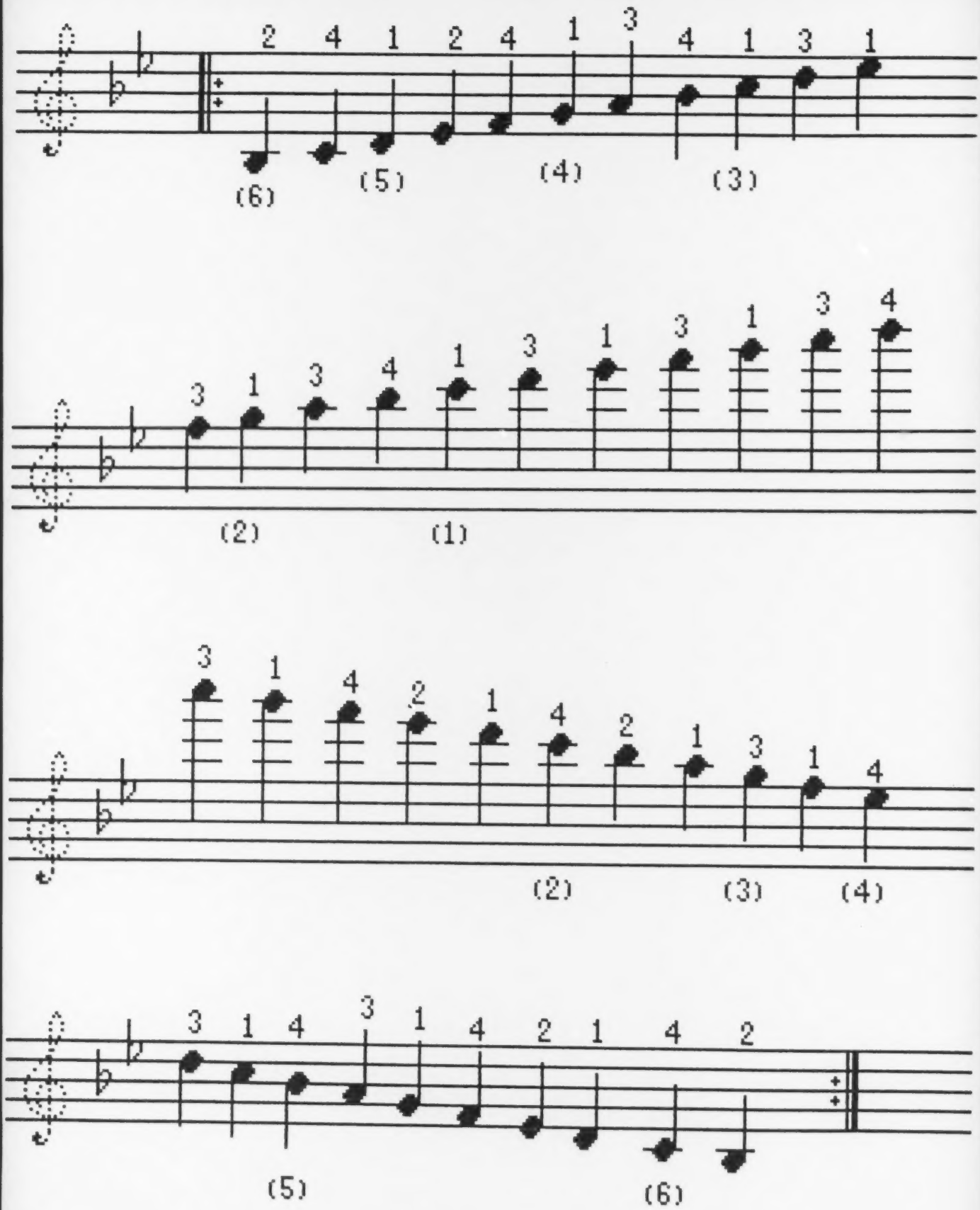
(3) (4) (5)



C MELODIC MINOR SCALE ASCENDING



C MELODIC MINOR SCALE DESCENDING


2 4 1 2 4 1 3 4 1 3 1
(6) (5) (4) (3)
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(2) (1)
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(2) (3) (4)
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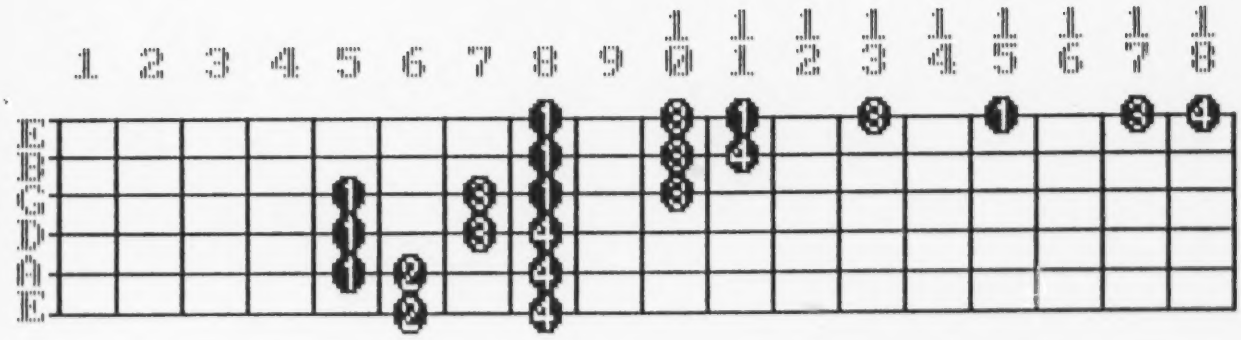
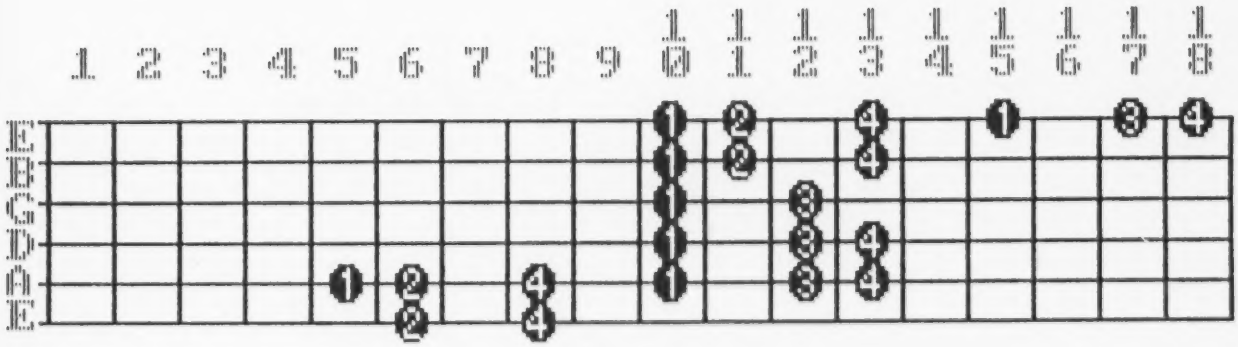
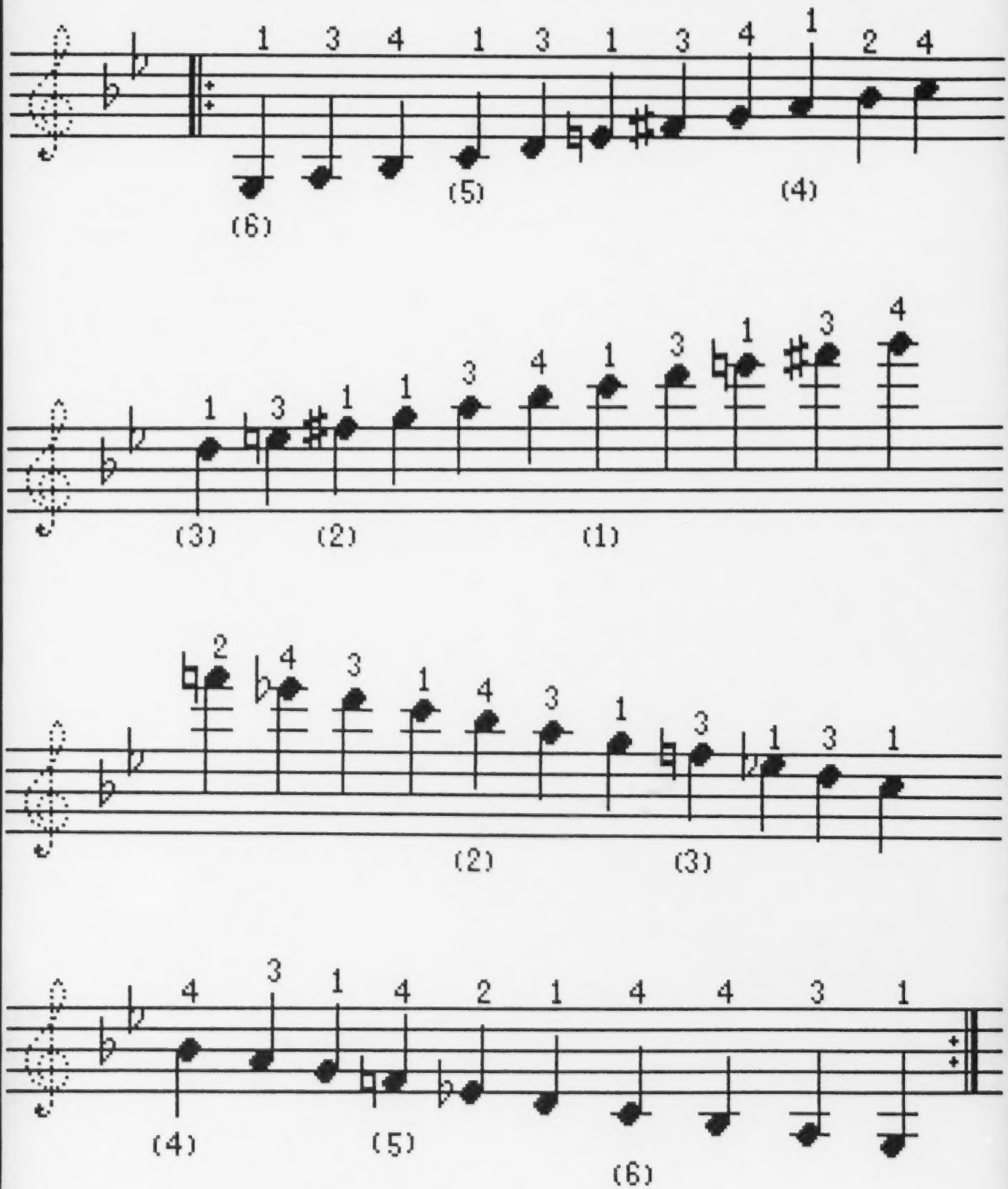
(5) (6)



B♭ MAJOR SCALE ASCENDING



B♭ MAJOR SCALE DESCENDING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(6) (5) (4)
1 3 1 1 3 4 1 3 1 3 4
(3) (2) (1)
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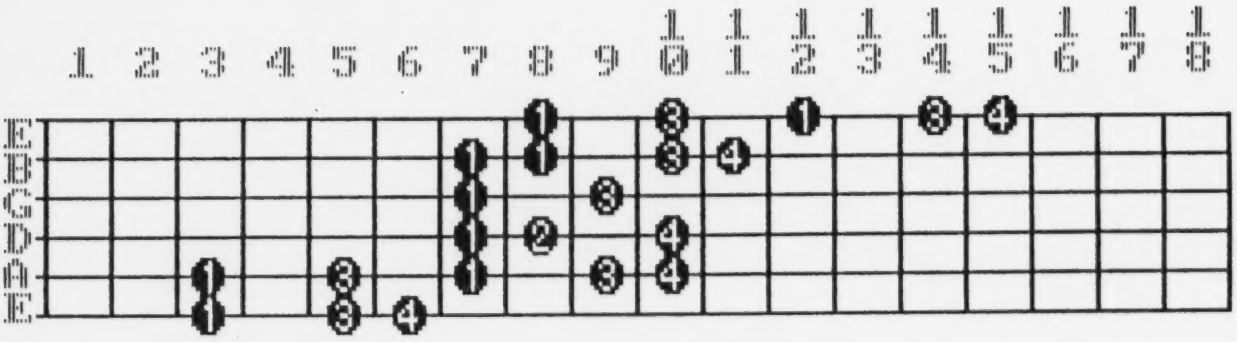
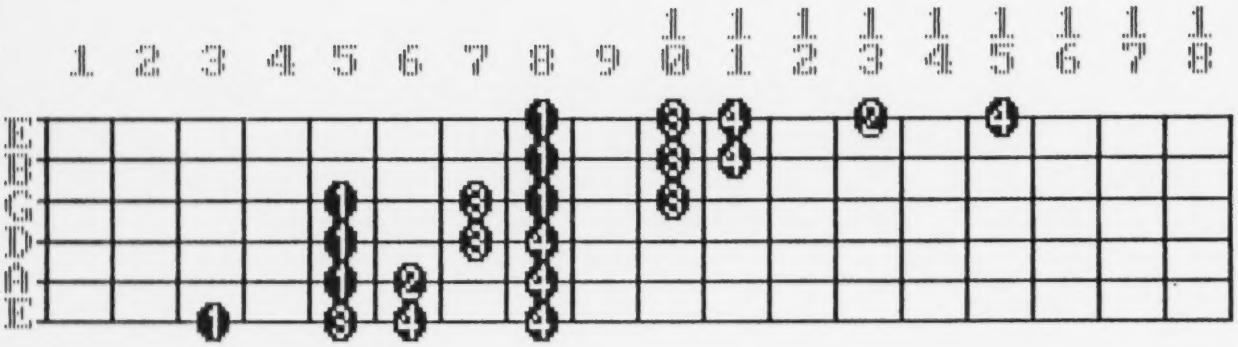
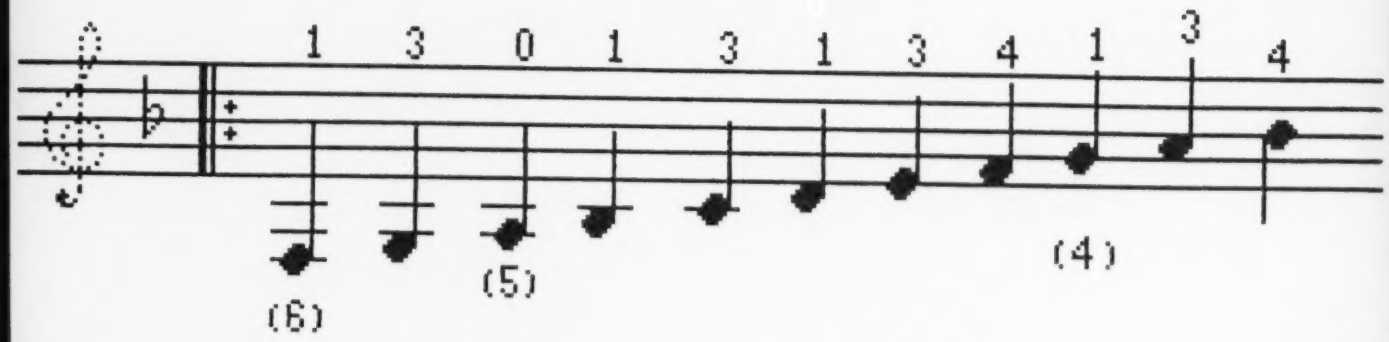
(2) (3)
4 3 1 4 2 1 4 4 3 1
(4) (5) (6)



G MELODIC MINOR SCALE ASCENDING



G MELODIC MINOR SCALE DESCENDING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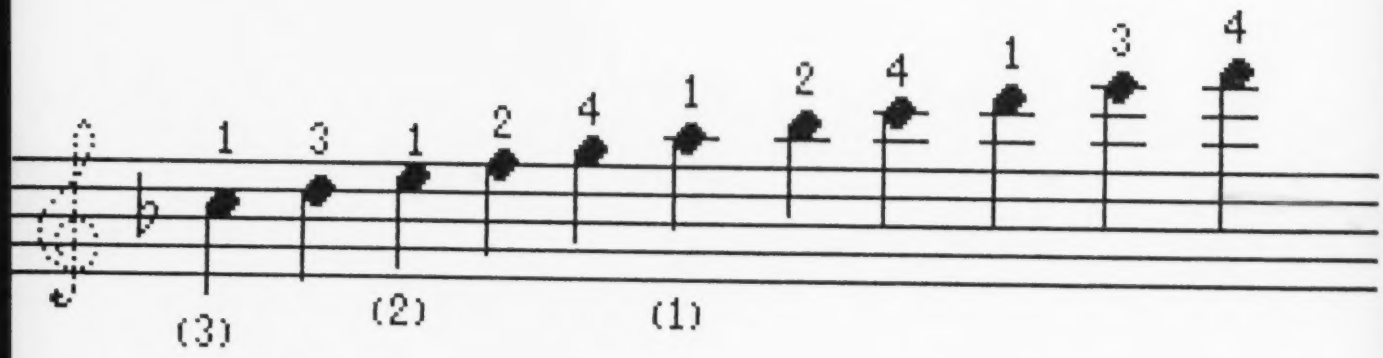
(6)
(5)
(4)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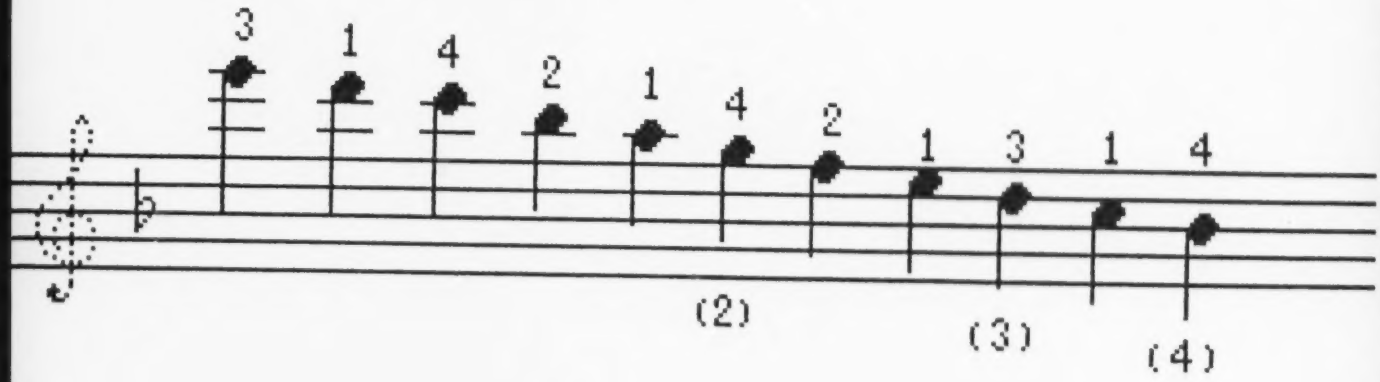
(3)
(2)
(1)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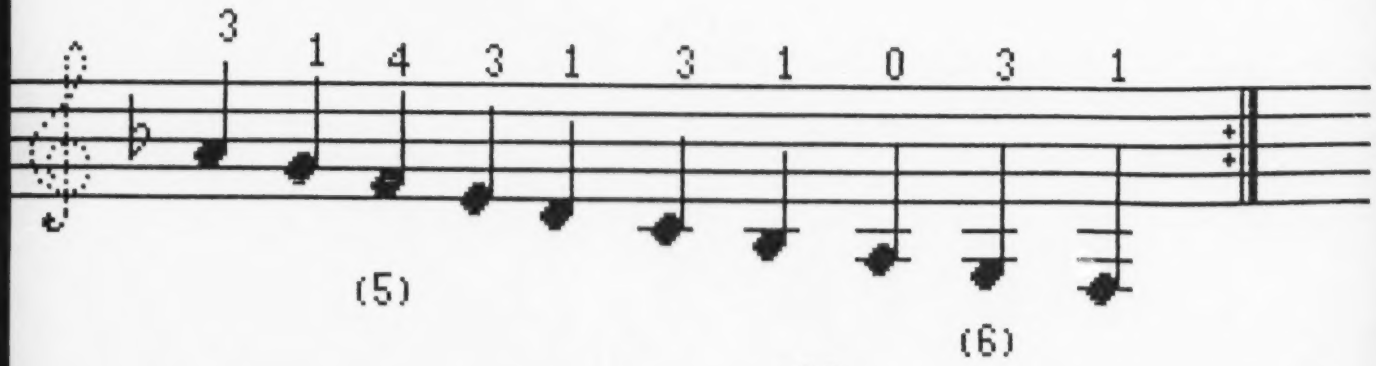
(2)
(3)
(4)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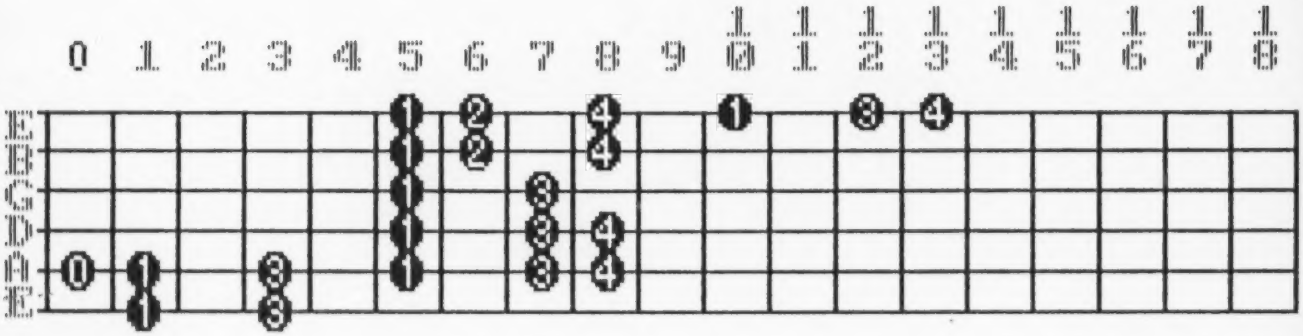
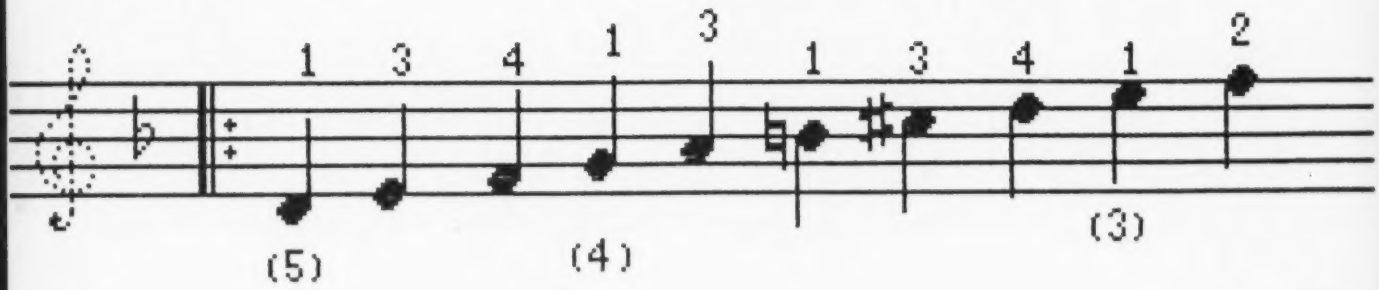
(5)
(6)



F MAJOR SCALE ASCENDING AND DESCENDING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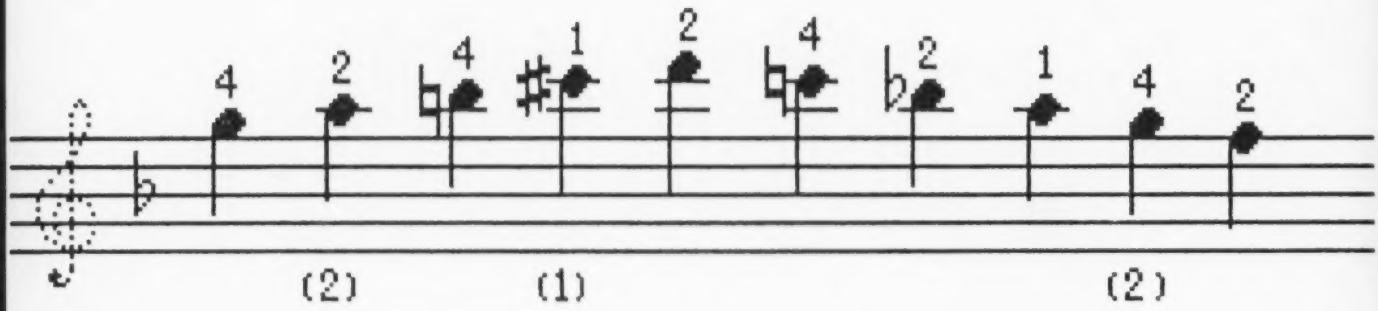
(5) (4) (3)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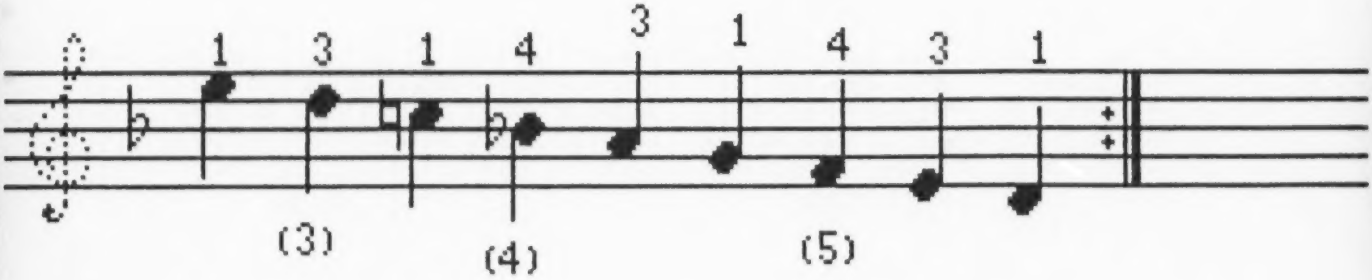
(2) (1) (2)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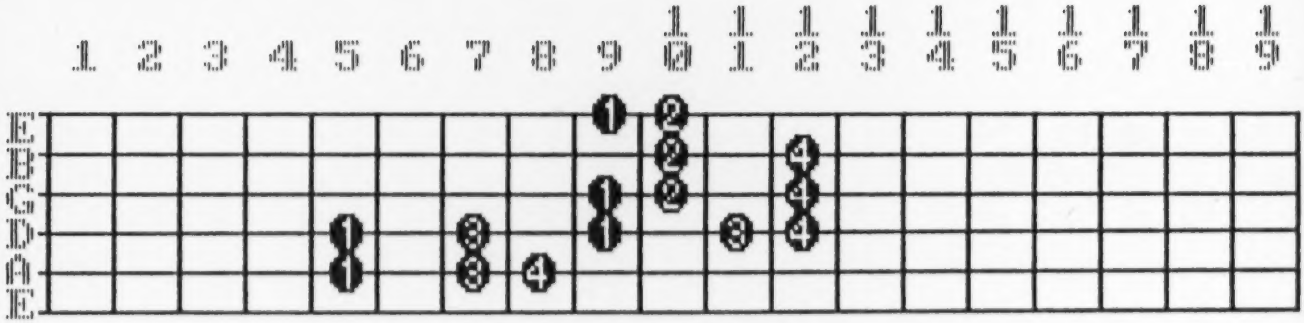
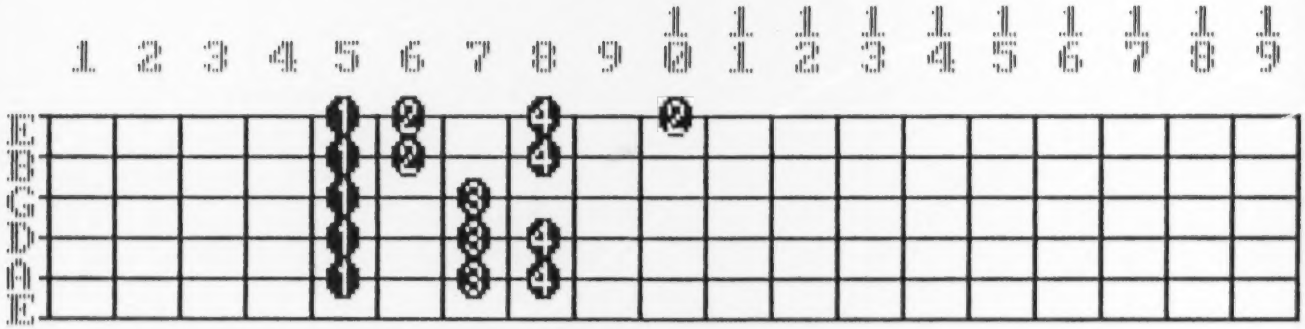
(3) (4) (5)



D MELODIC MINOR SCALE ASCENDING



D MELODIC MINOR SCALE DESCENDING